
Dance

Master's Program

herbergercollege.asu.edu/dance

480/965-5029

PEBE 107A

Claudia Murphey, Chair

Professors: Kaplan, Keuter, Murphey

Associate Professor: Jackson

Assistant Professors: Fitzgerald, Parrish, Tsukayama, Vissicaro

Associate Research Professional: Mitchell

MASTER OF FINE ARTS

The M.F.A. degree in Dance is a 60-semester-hour program. The program is designed to provide opportunities for the student to continue to develop in the areas of dance technique, choreography, performance and production; to gain further understanding of the philosophy, history, theory, education and science and somatics of dance; and to begin charting future directions through technology, media opportunities, and community partnerships.

Admission. All students must apply to the M.F.A. program in Dance through the Graduate College. A bachelor's degree with a major in Dance or its equivalent is required. Applicants must submit an application form, fee, transcripts, and other materials to the Graduate College Admissions office. An application packet and list of guidelines are available online at www.asu.edu/graduate/admissions. They may also be obtained from Graduate Admissions by calling 480/965-6113 or by sending e-mail to gradadmiss@asu.edu. The GRE examination is not required for admission into this program. The TOEFL exam is required for international students.

Three letters of reference, a current résumé, and a statement of intent must be filed with the Department of Dance to assess the qualifications of each candidate. In addition to submitting this material, the candidate must participate in a technique audition in modern dance and ballet and present a self-choreographed solo dance work approximately five minutes in length. The technique audition and solo work may be submitted on videotape (VHS format, Standard Play [SP] speed) or CD-ROM (Macintosh format); however, auditioning in person is preferred. Each candidate must also submit a videotape of a group work choreographed by the applicant within the last three years and/or a portfolio of relevant work in a chosen area(s) of expertise. Applicants for admission also participate in an interview with the faculty.

Program of Study. A total of 60 semester hours of graduate credit is required, including

1. 30 to 37 semester hours in foundational studio/theory course work (in the areas of technique and movement arts, choreography and art-making practices, interactive arts, education and community partnerships, theory, and professional preparation);
2. eight hours of individual M.F.A. project (choreography, performance, or other approved project);
3. 15 to 30 semester hours of electives in chosen area(s) of study.

In consultation with the graduate director, the graduate policy committee, and the student's supervisory committee, a program of study may be tailored to meet specific interests, needs, and abilities.

Credit Before Admission. Upon approval of the supervisory committee, a maximum of 24 semester hours of graduate credit completed before admission may be applied to the program if these courses were part of a completed master's degree in Dance. All course work appearing on the program of study must meet the seven-year time limit requirement.

Foreign Language Requirements. None.

M.F.A. Project. The M.F.A. project serves as the capstone experience in the graduate dance curriculum. Each candidate submits a prospectus to his or her supervisory committee outlining the nature of the M.F.A. project. This project may be choreography and/or performance, or projects designed to incorporate technology or other approved research components. The department welcomes projects in the areas of dance science and somatics, multimedia, community education and professional outreach, theory, and history whose approaches are interdisciplinary in nature. Required supporting documentation of the project must be written and bound and meet format approval from both the student's supervisory committee and the Graduate College.

Interdisciplinary Digital Media and Performance Concentration. Students interested in this M.F.A. in Dance, collaborative program should contact the director of Graduate Admissions in Dance.

Final Examination. An oral defense of the M.F.A. project is required.

DANCE HISTORY (DAH)

DAH 495 Theory and Methods of Dance Research. (3)

spring

Examines modes of inquiry, data gathering techniques, data analysis and representation, prospectus design, and presentation style for dance research studies. Seminar. Prerequisite: instructor approval. Pre- or corequisite: DAH 301 or 302.

DAH 501 Philosophy of Dance. (3)

once a year

Analyzes traditional and contemporary theories of dance with regard to issues of expression, form, and meaning.

DAH 502 Cultural Concepts of Dance. (3)

once a year

Examines the close connection between culture, dance, and movement through writings in cultural theory, dance ethnology, and philosophy.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

DANCE (DAN)**DAN 500 Research Methods. (1–12)***selected semesters***DAN 510 Dance Production. (1–3)***fall and spring*

Theory of costuming, lighting, makeup, scenery, and sound as related to dance performance. May be repeated once for credit. Lecture, studio. Prerequisite: DAN 211 (or its equivalent).

DAN 521 Sound Lab. (2)*fall*

Audio mixing for analog/digital recording and editing. Lecture, lab. Fee. Prerequisite: instructor approval.

DAN 522 Sound Design. (1–2)*spring*

Focus on digital recording/editing of audio compositions for choreographic and video projects. Lecture, lab. Fee. Prerequisite: instructor approval. Pre- or corequisite: DAN 423 or 521.

DAN 523 Dance, Computers, and Multimedia. (3)*fall and spring*

Introduces desktop multimedia as it relates to dance creation, production, education, and research. Lecture, lab. Fee.

DAN 534 Technique and Theory of Modern Dance. (3)*fall and spring*

Preparation in the performance and comprehension of professional-level modern dance for first-year graduate students. 6 hours weekly. May be repeated for credit. Prerequisite: placement audition.

DAN 535 Technique and Theory of Ballet. (2)*fall and spring*

Graduate study of ballet technique. May be repeated for credit. Studio. Prerequisite: placement audition.

DAN 542 Ideokinesis. (2)*fall*

Theoretical examination of ideokinetic methods of facilitating postural change and movement efficiency.

DAN 545 Laban Movement Analysis. (3)*spring*

Theory and practice of Laban movement analysis and Bartenieff fundamentals through movement integration, observation, critical research, notation, and analysis. Lecture, studio.

DAN 550 Graduate Dance Pedagogy: Modern. (3)*spring*

Overview of the role of modern dance technique and theory in the university curriculum, including current pedagogical theory, diversity, gender. May follow or precede internship in practical teaching.

DAN 551 Graduate Dance Pedagogy: Ballet. (3)*fall*

Advanced analysis of teaching techniques for ballet. Prerequisite: instructor approval.

DAN 564 Solo and Group Choreography I. (3)*fall*

Original choreography created for solo and group performance. Studio. Prerequisites: DAN 364 and 365 (or their equivalents).

DAN 565 Solo and Group Choreography II. (3)*spring*

Continuation of DAN 564. Studio. Prerequisite: DAN 564.

DAN 571 Dance Theatre. (1–3)*fall and spring*

Performance in specially choreographed dance productions. May be repeated for credit. Prerequisite: instructor approval.

DAN 580 Performance Studies Practicum. (1–3)*spring*

Focus on developing rehearsal skills and achieving performance excellence through the preparation of three completed works. Studio, lab.

DAN 591 Seminar. (1–3)*fall and spring*

Seminar focusing on enrichment topics, production aspects of thesis projects, teaching concerns, special lectures, films, or critiques.

DAN 598 Special Topics. (1–4)*selected semesters*

Topics may include the following:

- Advanced Hip Hop
- Argentine Tango II
- Ballet II
- Ballet Methodology
- Broadway Dance
- Capoeira
- Collaborative Multimedia Fee.
- Competition/Exhibition
- Competition/Exhibition II
- Competitive International Ballroom II
- Competitive International Ballroom III
- Dance Conditioning
- Dance Education and Technology Fee.
- Integrated Approaches in Dance Education Fee.
- Integrative Teaching Methods Fee.
- Intermediate Hip Hop
- Intermediate Modern Dance
- International Ballroom
- Irish Dance II
- Jazz III
- Latin Formation Teams
- Latin Salsa II
- Latin Salsa III
- Latin Salsa IV
- Latin/Swing/Ballroom II
- Latin/Swing/Ballroom III
- Latin Team II
- Performance Technology I Fee.
- Performance Technology II Fee.
- Pilates Mat
- Pilates/Yoga
- Swing/Latin/Ballroom III
- Swing Lindy II
- Tap III
- West African Dance II

DAN 634 Technique and Theory of Modern Dance. (3)*fall and spring*

Preparation in the performance and comprehension of professional-level modern dance for second-year graduate students. 6 hours weekly. May be repeated for credit. Prerequisite: placement audition.

DAN 664 Choreography Workshop. (1–3)*fall*

Choreographic study in a seminar context with faculty and guest artists. May be repeated for credit. Studio. Prerequisites: DAN 564, 565.

DAN 671 Dance Arizona Repertory Theatre. (3–4)*fall and spring*

Preprofessional modern dance company, emphasizing outreach and performance. Opportunity to work with guest artists and community schools and organizations. Lecture, studio. Prerequisite: instructor approval.

DAN 693 M.F.A. Project. (1–8)*fall, spring, summer*

Preparation for required M.F.A. project approved by the student's supervisory committee. Work is followed by a final oral examination and documentation appropriate to the project. Prerequisite: committee approval.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Design

Master's Program

www.asu.edu/caed/SOD/

480/965-4135

AED 154

Dr. Jacques Giard, Director

Professors: Brandt, Giard

Associate Professors: Bernardi, Cutler, Johnson, McDermott, Patel, Ratner, Rothstein, Sanft, Witt

Assistant Professors: Bender, Boradkar, Brungart, Herring, McCoy, Schoenhoff, Thibeau Catsis, Weed

The faculty in the School of Design, College of Architecture and Environmental Design, offer a postprofessional research degree program leading to the Master of Science in Design degree with concentrations in graphic design, industrial design, and interior design. Course offerings focus on such areas as facilities planning and management in design; human factors in design; methodology, theory, criticism in design; and visual communication design.

The faculty in the school also participate in offering the Ph.D. in Environmental Design and Planning program. See "Environmental Design and Planning," page 213, for information on this interdisciplinary, college-wide Ph.D. degree program.

MASTER OF SCIENCE IN DESIGN

The Master of Science in Design (M.S.D.) degree has three concentrations: graphic design, industrial design, and interior design.

Graphic Design Concentration

The graphic design concentration is for individuals interested in advanced studies in visual language, history, theory, criticism, methodology, design processes, and technology. This program develops an understanding of contemporary graphic design issues through specialized research and design skills. It also prepares the graduate student for a career in graphic design education.

Industrial Design Concentration

This concentration is for individuals interested in advanced studies in human factors, history, theory, criticism and methodology, design processes, and technology. This program develops an understanding of contemporary industrial design issues through specialized research and design skills. It also prepares the graduate student for a career in industrial design education.

Interior Design Concentration

The interior design concentration is for individuals interested in advanced studies in facilities planning and manage-

ment, or history, theory, criticism and methodology. This program develops an understanding of contemporary interior design issues through specialized research and design skills. It also prepares the graduate student for a career in interior design education.

Program Goals

The Master of Science in Design (M.S.D.) degree prepares students for leadership positions in industry, research, and teaching. The program has four goals:

1. to provide graduate education for students who have a baccalaureate degree in Graphic Design, Industrial Design, Interior Design, or a related design discipline;
2. to provide the opportunity for the development of specialized research and design skills to support the graphic design, industrial design, and interior design professions;
3. to provide the opportunity for professionals to gain the necessary research and design skills for academic careers; and
4. to develop critical skills which enable the graduates to contribute to the literature of design through articles, essays, books, and participation in conferences.

Areas of Study

There are four areas of study.

Methodology, Theory, and Criticism in Design. This area of study is available to majors with backgrounds in art, architecture, design history, graphic design, industrial design, interior design, sociology, environmental psychology, or research methods. Students choosing this area of study may focus on methodology, theory, or criticism, or they may choose to combine any or all of these three. Courses in this area of study address: selected design methodologies that stimulate creativity; methodologies for critical analysis; methodologies that lead to development of or application of theories and philosophies; the historical origins of theories and philosophies that form the basis of contemporary design; the implication of theory in design knowledge and its discourse; strategies for recognizing and interpreting emerging design issues and trends; the evolution of the literature of design criticism; definition of design criticism; the qualifications of design critics' application of theories or philosophies in making judgments; and qualities constituting effective critical writing. Applications include design research, design education, design marketing and production decision, and design criticism.

Facilities Planning and Management in Design. This area of study focuses on the coordination of the work place, equipment, and visual (graphic) environment with the people and organizational structure of the institution. The intent is to combine programming and management practices with current professional and technical expertise to provide humane and effective work environments. Facility-related responsibilities to support this concentration cluster into seven functional units: programming; facilities analysis; space management; interior planning and design;

human factors; interior codes; public welfare and safety; and interior installation.

Human Factors in Design. This area of study identifies the problems, establishes the strategies, and develops the design solutions needed for issues surrounding the human/product interface. The human/product interface focus applies systems (such as interactive design) and environments (such as museum and exhibition design). Special emphasis is placed on the relationship between human and test performance factors. Emphases include qualities of function; methods of forming organizational relationships; factors of environmental control systems (acoustics and illumination, way-finding, etc.); and human factors in graphic, product, and interior design. Subject matter also includes the design of equipment, machines, and spaces; ergonomics and forms of ergonomic documentation; and analysis of relationships between spaces, objects, and people as simulated through computer animation, imaging, and traditional modeling techniques.

Visual Communication Design. This area of study emphasizes the production and analysis of visual language systems in context. Students study the effects of visual media in society and investigate ways of employing that media to communicate information with increasing sophistication. Critical to this process is the development of ideas and approaches independent of commercial and technological trends. Research and applied projects require innovative thinking, writing, and form giving that consciously integrate knowledge of aesthetics, perception, human factors, and technology. Other areas of study, particularly those within the arts and social sciences, often inform research and applied projects. The teaching content of this area is tailored to the needs of the individual applicant; however, students may be invited to assist faculty on established research projects.

Program of Study. This program of study applies to the areas of study described in the preceding text. The program of study consists of 36 semester hours of course work at the 500-level or above with the following distribution:

DSC 580 Practicum: Methods of Teaching Design	3
Approved courses in the concentration area of study	9–15
Approved electives outside the school.....	6–12
Approved research methods courses.....	6–9
Thesis or Applied Project.....	6
Minimum total	36

Admission Requirements. Applicants must hold a baccalaureate degree in Graphic Design, Industrial Design, Interior Design, or a related design discipline to participate in this degree program. When applying for admission, applicants must declare one of three concentrations: graphic design, industrial design, or interior design. Additionally, an area of study must be identified from the following: methodology, theory, and criticism in design; facilities planning and management in design; human factors in design; or visual communication design. Admission to the M.S.D. program is selective. The School of Design does not defer admission.

Application Procedures. Applicants must file separate application materials to both the Graduate College and the School of Design. Materials must be sent separately to each department. Materials not sent directly to the individual departments may experience a delay and may result in denial of the application.

School of Design Requirements. Submit the following materials to

SCHOOL OF DESIGN
COLLEGE OF ARCHITECTURE AND
ENVIRONMENTAL DESIGN
ARIZONA STATE UNIVERSITY
PO BOX 872105
TEMPE AZ 85287-2105

1. An unofficial copy of all transcripts (A 3.00 or higher baccalaureate GPA is required for application).
2. An unofficial copy of TOEFL score (A minimum TOEFL score of 550 on paper-based test or 213 on computer-based test is required of international students whose native language is not English).
3. A mandatory statement of intent form (available at www.asu.edu/caed/SOD/design/PROGRAMS/Forms.htm), on which the applicant
 - a. specifies an intended concentration: graphic design, industrial design, or interior design.
 - b. specifies an area of study: facilities planning and management in design; human factors in design; methodology, theory, and criticism in design; or visual communication design.
 - c. discusses a proposed research topic. What will be the research focus? Why is this research important to the applicant, the design community, and the general population?
 - d. specifies his or her proposed mentor for intended research. Faculty biographies can be found on the Web site at www.asu.edu/caed/SOD.
 - e. discusses personal academic background and professional experience that has prepared the applicant for or will support proposed research topic.
4. Three letters of recommendation from persons qualified to comment on the applicant's potential in the selected concentration.
5. An application for Graduate Research/Teaching Assistantship and a résumé from applicants wishing to be considered for teaching or research assistantships (international students who wish to be considered for a teaching assistantship are required to pass the Test of Spoken English or the SPEAK test administered by the American English and Culture Program at ASU).
6. An 8.5" x 11" portfolio documenting research and imaginative projects that support the intended concentration.

The portfolio is returned after final admission procedures, provided sufficient prepaid postage is enclosed, or if the

GRADUATE PROGRAMS AND COURSES

materials are claimed in person within one year of submission. Unclaimed portfolios are retained for only one year. The School of Design assumes no liability for lost or damaged materials.

Application Deadlines. All materials must be received by the Graduate College and the School of Design by January 15 for fall semester consideration.

Applications for assistantships and scholarships are considered at the same time.

Selection Procedures and Notifications. The faculty evaluate the applications and supporting materials and recommend to the Graduate College whether the applicant should be granted regular or provisional admission or if admission should be denied. If admission is provisional, the Graduate College specifies in its letter of admission the provisions to be met to gain regular status. The school informs successful applicants of the procedures for enrollment.

Foreign Language Requirements. None.

Practicum. All students in the program must enroll in a three-hour teaching practicum (DSC 580) that focuses on the problems and issues surrounding studio, lecture, and seminar instruction. Emphasis is on the techniques of criticism and individual and group studio teaching.

Thesis or Applied Project. For students choosing the thesis option, six semester hours of DSC 599 Thesis apply toward the thesis. Guidelines in the *Format Manual* must be followed. For students choosing the applied project option, six hours of DSC 593 Applied Project apply.

Final Examination. An oral examination in defense of the thesis or applied project is required for all students in the M.S.D. program.

Web Addresses

Information about the program in Design, and the College of Architecture and Environmental Design in general, may be found on the Web site at www.asu.edu/caed. E-mail inquiries or requests should be sent to designmsd@asu.edu.

Facilities

The College of Architecture and Environmental Design maintains a high-bay research facility, a lighting laboratory, an ethnographic studies laboratory (DESIGNSPACE), an extensive shop facility, a human factors laboratory, as well as a state-of-the-art material resource center. The college's Research and Service Foundation provides facilities for basic research and community service activities in energy technology, design, and planning.

RESEARCH ACTIVITY

Research is an integral component of the M.S.D. program. Research interests of the School of Design faculty include design history, theory, and criticism; ambient environment; human factors and ergonomics; human behavior in the work environment; gender issues in design; leadership; cultural analysis; design methodologies and pedagogies; decision making and creativity; user-centered business and design innovation; ethnography in design; interactive learning experiences; and technology in education. For more

information about School of Design faculty research, access the school's Web site at www.asu.edu/caed/SOD.

DESIGN (DSC)

DSC 440 Finding Purpose. (3)

fall and spring

Career orientation in the creative professions, including value clarification, decision making, lifestyle planning, goal setting, and expression of individual talents.

DSC 500 Research Methods. (1–12)

selected semesters

Selection of research problems, analysis of literature, individual investigations, preparing reports, proposal and grant writing. Fee.

DSC 501 Qualitative Research in Design. (3)

spring

Theory and application of qualitative research. Emphasizes using ethnography to identify and specify innovative concepts and strategies.

Prerequisites: graduate standing or instructor approval.

DSC 520 Contemporary Design Issues. (3)

selected semesters

Projected applications in design production, planning, and decision-making processes. Lecture, seminar. Prerequisites: INT 310 and 311 (or their equivalents).

DSC 525 Design Methodologies. (3)

fall

Practical exercises and studies in problem-solving strategies; problem definition and supporting theory for the designer. Lecture, seminar, lab. Fee. Prerequisite: senior or graduate standing.

DSC 527 Modern Design Theory. (3)

spring

Aesthetic, political, economic, and social theories that have shaped modern design; theory as the basis for design philosophies. Lecture, seminar. Prerequisite: DSC 525 (or its equivalent).

DSC 529 Design Criticism. (3)

fall

Critical methods applied to design as material culture and human expression; evaluation of achievement versus intention. Lecture, seminar. Prerequisite: DSC 527 (or its equivalent).

DSC 544 Human Factors Systems and Documentation. (3)

fall

Advanced topics associated with theory and methods of human factors in design. Individual projects stressing problem organization, evaluation, and documentation. Lecture, seminar, lab. Prerequisite: DSC 344 (or its equivalent).

DSC 558 Daylighting. (3)

selected semesters

Daylighting as a design determinant; concepts, techniques, methodology, experiments, and case studies. Lecture, studio. Prerequisite: senior or graduate standing.

DSC 580 Practicum: Methods of Teaching Design. (3)

selected semesters

Background and development of design education theories. Concepts of studio teaching methods. Comprehensive student project development and evaluation methods. Prerequisite: graduate standing.

DSC 592 Research. (1–12)

selected semesters

DSC 593 Applied Project. (1–12)

selected semesters

Fee.

DSC 598 Special Topics. (1–4)

selected semesters

Topics may include the following:

- Facilities Planning I
 - Facilities Planning II
- Fee.

DSC 599 Thesis. (1–12)

selected semesters

Fee.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Economics

Master's and Doctoral Programs

wpcarey.asu.edu/ecn/programs.cfm

480/965-3531

BAC 659

Arthur E. Blakemore, Chair

Professors: Blakemore, Boyes, Brada, Burdick, Burgess, DeSerpa, Happel, Hoffman, Kingston, Low, Manelli, Mayer, McDowell, McPheters, Melvin, Méndez, Ormiston, Rogerson, Santos, Schlee, Zhou

Associate Professors: Ahn, Chade, Datta, Reffett, Reiser, Wilson

Senior Lecturer: Roberts

The faculty in the Department of Economics, W. P. Carey School of Business, offer programs leading to the M.S. and the Ph.D. degrees in Economics.

The faculty also participate in offering the professional program leading to the Master of Business Administration (see "Master of Business Administration," page 138), the program leading to the M.S. in Statistics (see "Master of Science," page 336) and the program leading to the Ph.D. degree in Business Administration. Further information concerning the degree programs in Economics can be obtained from the Director of Graduate Programs, Department of Economics.

Admission. See "Admission to the Graduate College," page 85. In addition, each applicant to either graduate program must submit three letters of recommendation from academic sources and test scores for the general aptitude portion of the Graduate Record Examination (GRE). Submission of scores from the GRE advanced test in economics is recommended. Applications should be received at the Department of Economics by March 1 if the student is seeking a graduate assistantship.

Students are expected to have demonstrated competency in economics at a minimum level through ECN 313 and 314 and in mathematics through MAT 271. Passing grades in the equivalents of these courses taken at other colleges are accepted as a demonstration of competency. Additional courses in calculus, linear algebra, and statistics are recommended before the first semester in the program.

Students with inadequate undergraduate preparation in economics or mathematics may be required to remove deficiencies before enrolling in graduate courses.

MASTER OF SCIENCE

The M.S. program in Economics is designed to give students a broad understanding of critical analysis of business problems and the quantitative skills necessary for their anal-

ysis. Graduates of the program will have distinctive capabilities in quantitative skills and business data analysis applied to markets and firm behavior, customer behavior, business strategies and processes, and global impacts on business.

Program of Study. See "Master's Degrees," page 94, for general requirements. See the *Department of Economics Graduate Student Handbook* for specific requirements.

Course Load. Students are limited to 15 semester hours per semester.

Foreign Language Requirements. None.

Thesis Requirements. Students have the option of a non-thesis or thesis track. For the nonthesis track, students are required to conduct an applied research project under the supervision of a faculty member. The applied research project often is conducted in conjunction with an internship, and three hours of credit is granted for the project. For the thesis option, six semester hours of credit is granted for completion of the thesis.

Final Examination. A final oral examination in defense of the thesis or applied research project is required.

DOCTOR OF PHILOSOPHY

The Ph.D. degree program is designed to provide the student with a more fundamental command of basic economic analysis and of the subject matter in several specialized fields. It is designed to qualify students for teaching at higher education institutions and for research positions in public agencies and private business organizations.

Program of Study. See "Doctor of Philosophy," page 96, for general requirements. In addition to completing 60 semester hours of credit beyond the bachelor's degree (30 semester hours beyond the master's degree) and 24 semester hours research dissertation credit, the Ph.D. student must accomplish five tasks:

1. meet qualification requirement,
2. present at least two fields of study,
3. pass the comprehensive examination,
4. pass the dissertation proposal defense, and
5. complete a dissertation with an oral defense.

See the *Department of Economics Graduate Student Handbook* for details concerning these tasks.

Qualifying Examinations. The student must demonstrate proficiency in economic theory and application by passing both the microeconomic and macroeconomic qualifying examinations. These examinations are given at the beginning of the fall semester of the second year of graduate study.

Fields of Study. Students are required to present at least one primary field and one secondary field for the Ph.D. The primary field must be the one in which the comprehensive examination is taken; usually this is the field in which dissertation work is contemplated.

Comprehensive Examination. The comprehensive examination consists of a written and oral test. The written

GRADUATE PROGRAMS AND COURSES

examination consists of questions designed to test the student's knowledge of the proposed research area. Examination questions are designed to cause the student to examine the research topic in considerable depth and breadth. The oral examination consists of questions designed to test the student's knowledge of the proposed research area. Examination questions are designed to expand on the written examination as well as to provide guidance on the dissertation research.

Dissertation Proposal Defense. Students prepare a preliminary draft of the dissertation proposal before taking the comprehensive examination. Upon passing the comprehensive examination, students submit a revised dissertation proposal to their supervisory committee that formalizes the research agenda and incorporates the supervisory committee's suggestions. The dissertation proposal must be defended orally.

Admission to Candidacy. The student should apply promptly for admission to candidacy after passing the comprehensive field examination, oral examination, and the dissertation proposal defense.

Dissertation Requirements. A dissertation representing original research work of high quality, demonstrating the student's proficiency in the field, is required.

Foreign Language Requirements. None.

Final Examination. An oral examination in defense of the dissertation is required.

ECONOMICS (ECN)

ECN 410 Applied Business Forecasting. (3)

once a year

Applies forecasting techniques in business and institutional environments. Prerequisite: STP 226 or QBA 221.

ECN 475 Capstone in Economics. (3)

fall and spring

Capstone course integrating several areas of economics. See ECN Note 2. Prerequisites: ECN 313, 314. Pre- or corequisite: ECN 425.

ECN 502 Managerial Economics. (2–4)

fall and spring

Applies microeconomic analysis to managerial decision making in areas of demand, production, cost, and pricing. Evaluates competitive strategies. Prerequisite: M.B.A. degree program student.

ECN 503 Global Economics for Managers. (2–4)

fall and spring

Macroeconomic analysis of issues related to economic growth, inflation, interest rates behavior, unemployment, exchange rate determination, and global competitiveness. Prerequisite: M.B.A. degree program student.

ECN 504 History of Economic Thought. (3)

once a year

Historical development of economic theory. Emphasizes the development of economic analysis from preclassical economics through Keynes. Prerequisite: ECN 510 or instructor approval.

ECN 509 Macroeconomic Theory and Applications. (2–4)

fall

Theory of income, output, employment, and price level. Influence on business and economic environment. Prerequisites: both ECN 111 and calculus or only instructor approval.

ECN 510 Microeconomic Theory and Applications. (2–4)

fall

Applies economic theory to production, consumer demand, exchange, and pricing in a market economy. Prerequisites: both ECN 112 and calculus or only instructor approval.

ECN 517 Monetary Theory. (3)

fall

Traditional and post-Keynesian monetary theory, interest rate determination, the demand and supply of money. Prerequisite: ECN 711 or instructor approval.

ECN 541 Public Economics. (3)

fall

Economics of collective action, public spending, taxation, and politics. Impact of central governmental activity on resource allocation and income distribution. Prerequisite: ECN 510 or instructor approval.

ECN 584 Economics Internship. (1–3)

summer

Academic credit for professional work organized through the Internship Program. Prerequisites: both ECN 510 and 711 or only instructor approval.

ECN 591 Economics Seminar. (1–3)

fall, spring, summer

Presentations by outside speakers, department faculty, and graduate students of work in progress. Prerequisite: instructor approval.

ECN 593 Applied Projects. (3)

fall

Preparation of a supervised applied project typically in conjunction with an internship. Prerequisites: ECN 510, 711.

ECN 594 Conference and Workshop in Economics. (1–12)

fall

Workshops offered include: economic analysis, microeconomic analysis, macroeconomics.

ECN 598 Special Topics. (3)

selected semesters

Advanced topics in economics. Consult the *Schedule of Classes* for offerings. Prerequisite: instructor approval.

ECN 711 Macroeconomic Analysis I. (3)

fall

Current theories of output, employment, inflation, and asset prices as well as major aggregates. Introduces dynamic optimization techniques. Prerequisites: both ECN 313 and calculus or only instructor approval.

ECN 712 Microeconomic Analysis I. (3)

fall

Theory of production, consumer demand, resource use, and pricing in a market economy. Prerequisites: both ECN 314 and calculus or only instructor approval.

ECN 713 Macroeconomic Analysis II. (3)

spring

Focuses on growth theory, dynamic general equilibrium models, monetary theory, open-economy issues. Prerequisite: ECN 711 or instructor approval.

ECN 714 Microeconomic Analysis II. (3)

spring

General equilibrium, welfare economics, production, and capital theory. Prerequisite: ECN 712 or instructor approval.

ECN 715 Advanced Macroeconomic Analysis. (3)

fall

Focuses on current research areas in macroeconomics and monetary theory with emphasis on methods in economic dynamics and numerical techniques. Prerequisite: ECN 711 or instructor approval.

ECN 716 Economics of Uncertainty, Information, and Strategic Behavior. (3)

fall

Economic behavior under uncertainty; markets and contracts under asymmetric information; the theory of games with incomplete information and applications. Prerequisite: ECN 712 or instructor approval.

ECN 721 Labor Economics I. (3)

spring

Development of basic theoretical models for analyzing labor market issues. Prerequisites: both ECN 713 and 714 or only instructor approval.

ECN 722 Labor Economics II. (3)

selected semesters

Extensions/criticisms of labor market theories. Applications to a variety of policy issues. Prerequisites: both ECN 713 and 714 or only instructor approval.

ECN 725 Econometrics I. (3)*spring*

Problems in the formulation of econometric models. Emphasizes estimation, hypothesis testing, and forecast of general linear models. Prerequisite: 6 hours in statistics or instructor approval.

ECN 726 Econometrics II. (3)*fall*

Estimation and inference of qualitative and limited dependent variable models as well as general multiple equation models. Prerequisite: ECN 725 or instructor approval.

ECN 727 Econometrics III. (3)*spring*

Generalized method of moment estimation, estimation with censored and truncated samples, nonlinear models, panel-data models, econometrics of nonstationarities. Prerequisite: ECN 726 or instructor approval.

ECN 736 International Trade Theory. (3)*selected semesters*

Theories of comparative advantage and their empirical verification. Theory and political economy of commercial policy. Resource transfers and the role of the multinational corporation. Prerequisites: both ECN 713 and 714 or only instructor approval.

ECN 738 International Monetary Theory and Policy. (3)*selected semesters*

Foreign exchange market, balance of payments, and international financial institutions and arrangements; theory and applications. Prerequisites: both ECN 713 and 714 or only instructor approval.

ECN 753 Industrial Organization. (3)*selected semesters*

Analyzes structure, conduct, and performance in industrial markets; the economics of organizations. Prerequisites: both ECN 713 and 714 or only instructor approval.

ECN 760 Economics of Growth and Development. (3)*selected semesters*

Economic problems, issues, and policy decisions facing the developing nations of the world. Prerequisites: both ECN 713 and 714 or only instructor approval.

ECN 770 Mathematics for Economists. (3)*fall*

Survey of mathematical ideas encountered in economics and econometrics: nonlinear programming, the Kuhn-Tucker theorem, concave programming, optimization over time. Prerequisite: calculus or instructor approval.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

QUANTITATIVE BUSINESS ANALYSIS (QBA)**Department of Economics**

For more QBA courses, see "Department of Supply Chain Management" under "Business Administration."

QBA 502 Managerial Decision Analysis. (2–4)*fall and spring*

Fundamentals of quantitative analysis to aid management decision making under uncertainty. Prerequisites: MAT 210; computer literacy; graduate degree program student.

QBA 525 Applied Regression Models. (3)*once a year*

Simple linear regression, multiple regression, indicator variables, and logistic regression. Emphasizes business and economic applications. Prerequisite: MAT 210.

QBA 527 Categorical Data Analysis. (3)*once a year*

Discrete data analysis in business research. Multidimensional contingency tables and other discrete models. Prerequisite: QBA 525.

QBA 530 Experimental Design. (3)*once a year*

Experimental designs used in business research. Balanced and unbalanced factorial designs, repeated measures designs, and multivariate analysis of variance. Prerequisite: QBA 525 (or its equivalent).

QBA 535 Multivariate Methods. (3)*once a year*

Advanced statistical methods used in business research. Multivariate analysis of association and interdependence. Prerequisite: QBA 525.

QBA 540 Forecasting. (2–4)*selected semesters*

Foundation of statistical forecasts and forecast intervals; applies classical and computer-assisted forecasting methods to business forecasting problems. Prerequisites: MAT 210; QBA 502.

QBA 593 Applied Project. (1–12)*selected semesters***QBA 599 Thesis. (1–12)***selected semesters*

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Education**Master's and Doctoral Programs**

MASTER OF EDUCATION

Master of Education (M.Ed.) programs in the College of Education prepare scholarly professionals. Programs are available in Counselor Education, Curriculum and Instruction, Educational Administration and Supervision, Educational Psychology, Educational Technology, Higher and Postsecondary Education, and Special Education. Concentrations within the M.Ed. in Curriculum and Instruction include bilingual education, early childhood education, elementary education, English as a second language, Indian education, language and literacy, mathematics education, professional studies, science education, secondary education, and social studies education. Within Special Education, M.Ed. areas of concentration are education of the gifted, the mildly disabled, the multicultural exceptional, and severely/multiply disabled children. See individual program listings in this catalog for more information.

A Master of Arts degree in Social and Philosophical Foundations of Education is also available.

Admission. The College of Education requires above-average performance on the verbal scale of the GRE in addition to the general requirements for admission to the Graduate College. (For some programs the Miller Analogies Test may be substituted for the GRE.) Individual divisions or programs, however, may require superior test scores or GPA for admission. Division admission committees review a variety of evidence presented by applicants for admission consideration. Applicants with lower test scores or grades below minimum levels may be considered for admission recommendation if counterbalancing evidence suggesting the potential for outstanding performance in a master's program is available to division admission committees.

Program of Study. A minimum of 30 to 36 semester hours of course work approved by the student's supervisory committee, division director, and the Graduate College is required for the Master of Education degree. Candidates for the Master of Education degree should contact the division offering the graduate degree they are seeking for specific

GRADUATE PROGRAMS AND COURSES

core requirements. *A program of study should be filed as early as possible and not later than upon completion of nine semester hours of graduate course work.*

Examinations. All M.Ed. programs require successful completion of a written comprehensive examination or applied project. These examinations focus on the specialized content of the specific M.Ed. program of study. Comprehensive examinations are written and evaluated by program faculty. If the student should fail the written comprehensive examination, a reexamination may be administered no sooner than three months and no later than one year from the date of the original examination. Approval of the reexamination must be obtained from the supervisory committee, division director, and the dean of graduate studies.

DOCTOR OF EDUCATION

The Doctor of Education (Ed.D.) degree is primarily a professional degree, designed for persons who wish to pursue careers as leaders in education or as applied researchers. Emphasis is on application of research and theory in education, and on acquisition of professional skills. Prospective students must demonstrate superior scholarship and leadership in professional education. Each student is expected to acquire broad knowledge in the major field and to produce a dissertation addressing a significant educational issue or problem.

Admission. Applicants must meet the general requirements established by the Graduate College as well as College of Education requirements. Satisfaction of these requirements does not guarantee admission. All divisions require submission of a two-page formal letter of application describing the applicant's prior relevant experience and accomplishments and specifying areas of greatest interest as well as career goals. Individual divisions or programs may have standards higher than these minimums or may require submission of additional materials. Applicants should consult the division director or program coordinator for specific admission requirements.

Program of Study. The program requires a minimum of 60 semester hours beyond the master's degree. Of these, at least six hours must be in internship. College of Education core courses must also be completed. These vary according to the degree sought. See "Courses," page 191, for a listing. The recommendation for the program committee is reviewed simultaneously with the program of study.

The quality of student work is evaluated through written comprehensive examinations, formal oral and written presentation of the dissertation proposal, and a final oral examination in defense of the dissertation. Students must demonstrate competence both in the application of research findings and in conducting research. The dean of graduate studies, upon recommendation of the division director, appoints the dissertation committee for each Ed.D. student. This committee reviews and evaluates the student's dissertation proposal and conducts the final oral examination.

Residency. The minimum residence requirement for the Ed.D. degree is completion of 30 semester hours within three semesters after admission to the doctoral program at

ASU. Not more than 10 semester hours of Research (792), Applied Project (793), and Dissertation (799) credit may be included in the course work used to meet the 30-hour residence requirement.

Continuous Enrollment and Reentry. Graduate students in the College of Education who have not attended ASU for one or more semesters must apply to the Graduate College for reentry and, following approval of the reentry application, must register for a minimum of one semester hour of graduate credit in the degree area during each of the following semesters. Applications for reentry are considered along with all other new applications to the degree program.

Reentry is not an issue for students who maintain continuous enrollment and make satisfactory progress toward their degrees. If a program of study must be interrupted for one or more semesters, the student must apply to the supervisory committee and the division director for leave status, not to exceed one calendar year.

Foreign Language Requirements. None.

Comprehensive Examinations. When students have essentially completed the course work in an approved program of study, they should take the comprehensive examinations. The written and oral examinations are designed to assess the student's mastery of the field of specialization. Failure in the comprehensive examinations is considered final unless the supervisory committee and the director of the division recommend, and the dean of graduate studies approves, a reexamination. A reexamination may be administered no sooner than three months and no later than one year from the date of the original examination. Only one reexamination is permitted.

Candidacy. Doctoral students should apply for admission to candidacy immediately after they have met all requirements for the degree, except the dissertation. These requirements include passing the comprehensive examinations and other requirements specified by the division.

Research and Dissertation Requirements. The dissertation should demonstrate advanced analytic competence and contribute to the understanding and improvement of professional practice. Each candidate must register for a combined total of 24 semester hours for 792 Research and 799 Dissertation. The final copy of the dissertation must be reviewed by the supervisory committee and the Graduate College at least three weeks before the degree conferral date. Copies of the *Format Manual* are available in the Graduate College and on the Web at www.asu.edu/graduate/formatmanual.

Final Examinations. The final oral examination in defense of the dissertation is mandatory and must be held on the campus of ASU. The oral defense is scheduled by the supervisory committee with the approval of the dean of graduate studies.

Graduation. The student is eligible for graduation when the Graduate College scholarship requirements have been met, the final oral examination has been passed, and the dissertation has been approved by the supervisory committee

and accepted by the director of the division and the dean of graduate studies.

Applications for graduation should be made no later than the date specified in the Graduate College calendar.

Maximum Time Limit. The candidate must take the final oral examination in defense of the dissertation within five years after passing the comprehensive examinations. Any exception must be approved by the supervisory committee and the dean of graduate studies and ordinarily involves repetition of the comprehensive examinations.

Courses. The core courses for the College of Education graduate programs carry the prefix “COE.” These courses are no longer required for all graduate majors in the College of Education. Contact the appropriate division to obtain specific core requirements.

COLLEGE OF EDUCATION (COE)

COE 501 Introduction to Research and Evaluation in Education. (3)

fall, spring, summer

Overview of educational inquiry from controlled, quantitative to qualitative, naturalistic. Emphasizes locating and critically interpreting published research.

COE 502 Introduction to Data Analysis. (3)

fall, spring, summer

Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate educational research problems. Experience using statistical software. Cross-listed as EDP 502. Credit is allowed for only COE 502 or EDP 502.

COE 503 Introduction to Qualitative Research. (3)

fall, spring, summer

Terminology, historical development, approaches (including ethnography, ethnomethodology, critical theory, grounded theory, and hermeneutics), and qualitative versus quantitative social sciences; methods of inquiry. Cross-listed as EDP 503. Credit is allowed for only COE 503 or EDP 503.

COE 504 Learning and Instruction. (3)

fall, spring, summer

Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice. Cross-listed as EDP 504. Credit is allowed for only COE 504 or EDP 504.

COE 505 American Education System. (3)

fall, spring, summer

Political, social, historical, and philosophical analyses of American education at all levels. Examines primary sources, legal findings, and case studies.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 50.

**Educational Administration
and Supervision**

Master’s and Doctoral Programs

coe.asu.edu/elps/admin.php

480/965-6357

ED 120

**Kay Hartwell Hunnicutt, Academic Program Coordinator,
D.E.L.T.A. Doctorate**

**James E. Jurs, Academic Program Coordinator,
M.Ed. in Educational Administration and Supervision**

**L. Dean Webb, Academic Program Coordinator,
Ph.D. in Educational Administration and Supervision**

Donna J. Macey, Internship Coordinator and Certification

Professors: González, Norton, Webb, Wiley

Associate Professors: Danzig, Hunnicutt

Assistant Professors: Begaye, Read

Clinical Associate Professor: Macey

The faculty in the Division of Educational Leadership and Policy Studies offer graduate programs leading to the Master of Education and Doctor of Education degrees in Educational Administration and Supervision. Graduate course work leading to Arizona certification for principal, supervisor of instruction, and the superintendency is also available through the program.

Students interested in the Ph.D. degree with a field of study encompassing educational administration should refer to “Educational Leadership and Policy Studies,” page 193. See also “Doctor of Philosophy,” page 96, for general information on the Ph.D. degree.

A minimum of 36 semester hours is required for the M.Ed. degree. Applicants for admission to the doctoral degree programs must submit scores on the GRE.

Candidates for all degrees must pass a written comprehensive examination. An oral examination over the written portion of the comprehensive examination may be required of Ed.D. candidates at the discretion of the student’s program committee. In addition, candidates for the Ed.D. and Ph.D. must pass a final oral examination in defense of the dissertation. Candidates for the M.Ed. and Ed.D. programs may be required to take certain College of Education core courses depending upon previous experience and education. Pre-approval by an advisor is required. For core courses, see specific program requirements. A set of research courses is required for the Ed.D. degree.

GRADUATE PROGRAMS AND COURSES

MASTER OF EDUCATION

See “Master of Education,” page 189, for general information on the Master of Education degree.

DOCTOR OF EDUCATION

See “Doctor of Education,” page 190, for general information on the Doctor of Education degree.

RESEARCH ACTIVITY

Faculty research includes the study of economics and financing of education, competency performance, administrator preparation, roles and characteristics of school administrators, educational demographics, equity in leadership, administrative decision processes, evaluation of teaching performance, evaluation of administrative performance, community education, effects of legislative budget limitations, personnel administration communications, alternative school programs, policy formation, planning, and school board problems.



Programs offered through Disability Resources ensure that the campus is accessible to all students.

Tim Trumble photo

EDUCATIONAL ADMINISTRATION AND SUPERVISION (EDA)

EDA 501 Competency/Performance in Educational Administration. (3)

fall and summer

Nature of educational administration and the concept of competency as it applies to educational administration.

EDA 511 School Law. (3)

spring

Constitutional, statutory, and case law that relates to all school personnel, pupils, the school district, and other governmental units. Contracts, dismissals, tenure, retirement, pupil injuries, liability of personnel and district, school district boundary changes, and bonding.

EDA 525 Human Relations and Societal Factors in Education. (3) *selected semesters*

Interrelations between problems of educational administration and interdisciplinary social sciences. Communications skills, morale, authority, and perception. Concepts from political science, economics, and social-psychology useful to the administrator.

EDA 526 Instructional Supervision. (3)

fall, spring, summer

Administering curriculum improvement, in-service education, evaluating, and improving teaching competence; administrative instructional responsibilities.

EDA 544 Public School Finance. (3)

fall

Measures of ability, efforts, and educational need; capital outlay funding; tax revenues; federal, state, and local financing alternatives; major issues and trends in the financing of public education.

EDA 548 School, Family, and Community Connections. (3)

selected semesters

Provides deeper understandings of the nature of community in American life, and of connections between schools, families, and communities.

EDA 555 Educational Facility Planning. (3)

selected semesters

School building needs, educational planning for facilities, responsibilities of architects, duties of contractors, and equipping and furnishing of school buildings.

EDA 571 School Business Management. (3)

fall, spring, summer

Purchasing, budgeting, accounting, payroll management, auditing, financial reporting, insurance, and administration of nonteaching personnel and services.

EDA 573 Human Resources Administration. (3)

spring

Organization for human resources services; development of policy to govern the human resources function and its related processes.

EDA 576 The School Principalship. (3)

fall

Problem and laboratory approaches used to provide application of administrative activities of elementary and secondary schools. Prerequisites: EDA 501, 526.

EDA 611 Educational Policy and the Law. (3)

summer in odd years

Emphasizes policy analysis and application of federal and state law to policy evaluation and development in public schools. Lecture, case studies. Prerequisite: EDA 511 or HED 649. Corequisite: admission to doctoral program in education.

EDA 624 Organizational Development and Management of Schools. (3)

spring

Current organizational patterns for public schools. Emphasizes the organizations, human, and social dimensions on organizations. Lecture, discussion, projects.

EDA 634 Instructional Leadership. (3)

selected semesters

Curricular practices and processes used by instructional leaders who plan, organize, and coordinate the professional activities in elementary and secondary schools. Prerequisite: EDA 526.

EDA 645 Leadership Development for Education Leaders. (3)*spring*

Principles, theories, attributes, and skills related to individual leadership development. Lecture, online computer modules. Also offered as a Web-only course. Prerequisite: admission to doctoral program in education or instructor approval.

EDA 675 Politics of Education. (3)*spring*

Uses social science theory and research to consider the political context of educational policy making. Prerequisite: COE 505.

EDA 676 The School Superintendency. (3)*spring*

Critical examination of the school superintendency and the primary functions of this educational position. Includes duties, responsibilities, activities, and problems of the school superintendent. Examines the unique leadership role of the school superintendent. Prerequisite: instructor approval.

EDA 677 Foundations of Educational Reform Movements. (3)*fall*

Historical and contemporary survey of curricular reform movements in the United States with emphasis on equity and social justice issues. Cross-listed as SPF 677. Credit is allowed for only EDA 677 or SPF 677. Prerequisite: admission to doctoral program in education or instructor approval.

EDA 679 Administration of Special Programs in Education. (1–3)*selected semesters*

For personnel administering special educational services; responsibilities of superintendents, principals, supervisors, and directors for special education, student personnel, audiovisual, library science, and others.

EDA 685 Education in Global Contexts. (3–6)*spring*

Global perspectives on education in contemporary society with emphasis on social, political, and economic factors that affect access and equity. Lecture, travel. Cross-listed as SPF 685. Credit is allowed for only EDA 685 or SPF 685. Prerequisite: admission to doctoral program in education or instructor approval.

EDA 691 Seminar. (1–12)*selected semesters*

Topics may include the following:

- Cultural Diversity in Educational Administration. (3)

EDA 711 Administrative Leadership. (3)*fall*

Emphasizes research in leadership; application of research findings to administrative and supervisory functions in educational endeavors. Prerequisites: EDA 624; 30 semester hours in educational administration; admission to doctoral program in education.

EDA 722 Administration of Instructional Improvement. (3)*spring*

Recent research relating to administrative and supervisory responsibilities for the improvement of the educational program. Effective processes by administrators, supervisors, consultants, and coordinators. Prerequisites: 30 semester hours in educational administration; admission to doctoral program in education.

EDA 723 Diversity in Education for School Leaders. (3)*spring*

Discusses current issues and leadership strategies for meeting the needs of diverse student populations combating inequity and inequality in education. Lecture, field experience. Prerequisite: admission to doctoral program in education or instructor approval.

EDA 791 Seminar. (1–12)*selected semesters*

Topics may include the following:

- Curricular and Instructional Leadership. (3)
- Economics and Finance of Schools. (3)
- Evaluation and Assessment of School Change. (3)
- Research on Teaching. (3)

EDA 792 Research. (1–12)*selected semesters***EDA 799 Dissertation. (1–15)***selected semesters*

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Educational Administration and Supervision

Master's Program

ASU West also offers a Master of Educational Administration and Supervision (M.Ed.) degree. For more information about the ASU West program, see the *ASU West Catalog*, call 602/543-4567, or access www.west.asu.edu on the Web.

Educational Leadership and Policy Studies

Doctoral Program

coe.asu.edu/elps/edlead.php

480/965-6357

ED 120

Gene V Glass, Academic Program Coordinator

Regents' Professor: Berliner, Glass, Smith

Professors: Appleton, Barone, Fenske, González, Hanson, Molnar, Norton, Tobin, Turner, Valverde, Webb, Wiley, Swadener

Associate Professors: Danzig, Hunnicutt, Margolis, Wilkinson

Assistant Professor: Moses

Research Professor: de los Santos

PROGRAM OVERVIEW

The Division of Educational Leadership and Policy Studies offers a Ph.D. in Educational Leadership and Policy Studies that emphasizes methods of policy analysis and provides for specializations in particular disciplines. Education policy studies deal with the entire process by which society derives, institutes, evaluates, and modifies the rules, both stated and unspoken, by which the educational system runs. Doctoral students receive course work and practical experiences in a variety of special contexts, including higher education, elementary and secondary schools, and education-governing bodies. The faculty seeks to train persons who will teach or pursue policy studies in school districts, government agencies, and universities. Admissions information and forms for this and other graduate programs are available online.

GRADUATE PROGRAMS AND COURSES

DOCTOR OF PHILOSOPHY

See “Doctor of Philosophy,” page 96, for general requirements.

Admission. In addition to meeting Graduate College minimum requirements, applicants must submit scores on the Graduate Record Examination, a statement of intent, a résumé, and three letters of recommendation. Application materials are available from the division and are submitted to the division office, in ED 120. Applications are considered at the end of October, February, and April. To be considered at any admissions meeting, a candidate’s file must be completed no later than the first day of the month in which the meeting is held. Students entering the program must have a bachelor’s or master’s degree in either education or an appropriate subject field (e.g., anthropology, economics, history, philosophy, or sociology), or additional courses are required in the areas of deficiency before admission to the program. Contact the division office for the appropriate admissions application. In selecting applicants, the program looks for background and career aspirations consistent with program goals and willingness to devote primary attention to courses and experiences on campus.

Program Committee. The program committee (chair and at least two other members) advises in the preparation of the program of study and administers the comprehensive examinations. The committee must be approved by the dean of graduate studies.

Dissertation Committee. After passing the comprehensive examination, a dissertation committee is formed upon the approval of the dean of graduate studies. The dissertation committee approves the subject and title of the dissertation. Members of the program committee may also serve as members of the dissertation committee; however, the committees may have different memberships. The dissertation chair must be a faculty member designated eligible to serve in this capacity by the dean of graduate studies.

Program of Study. Students entering the Ph.D. program with a master’s degree in a related discipline and with credit for between 24 and 30 semester hours of graduate course work are expected to earn a total of 84 semester hours past the B.A., including the transferred master’s hours; of these 84 semester hours, 54 must be earned at ASU. Of the 54 semester hours at ASU, 24 must be earned in research or dissertation. A typical student’s course of study would take the following form:

Policy Studies Core. At the heart of the Ph.D. program are 12 semester hours of course work on the foundations of policy studies.

SPF 591 S: Foundations of Inquiry	3
SPF 791 S: Pro-Seminar*	3
Choose one diversity course	3
EDA 691 S: Cultural Diversity in Educational Administration (3)	
HED 691 S: Cultural Diversity in Education (3)	
SPF 598 ST: Education of Women (3)	

Choose one organizational theory course	3
HED 688 Organizational Theory (3)	
SPF 622 Organizational Theory (3)	
Total	12

* This course must be taken in the first year.

Research Methods. Students gain expertise in many approaches to research, evaluation, and policy analysis. A wide variety of courses, both inside and outside the College of Education, is available to deepen a student’s competence and research emphasis. The particular courses should be chosen in consultation with the student’s program committee. A total of 12 semester hours is required in research methods.

COE 502 Introduction to Quantitative Research	3
COE 503 Introduction to Qualitative Research	3
Research electives	6
Total	12

Specialty Studies. Students complete at least 12 semester hours (approved by the student’s program committee) in an area of special interest: educational administration and supervision, higher education, policy analysis, social foundations, or research and evaluation methods.

Recommended Courses for the Ph.D. Specialization in Educational Administration and Supervision

EDA 573 Human Resources Administration	3
EDA 611 Educational Policy and the Law.....	3
EDA 645 Leadership Development for Education Leaders.....	3
EDA 675 Politics of Education	3
EDA 677 Foundations of Educational Reform Movements	3
EDA 685 Education in Global Contexts	3
EDA 711 Administrative Leadership	3
EDA 791 S: Curricular and Instructional Leadership	3
EDA 791 S: Economics and Finance of Schools	3
EDA 791 S: Evaluation and Assessment of School Change.....	3
EDA 791 S: Research on Teaching	3

Recommended Courses for the Ph.D. Specialization in Higher Education

HED 510 Introduction to Higher Education	3
HED 602 Institutional Research/Strategic Planning.....	3
HED 611 Curriculum and Instruction	3
HED 649 Law of Higher Education	3
HED 687 Governance, Coordination, and External Influences	3
HED 689 Leadership in Higher Education	3
HED 691 S: Critical Policy Issues in Higher Education.....	3
HED 691 S: Special Policy Issues	3

Total hours for specialty studies vary depending on specialization.

Practicum. Students must earn three semester hours of credit for a supervised practicum. The setting must be other than the student’s normal workplace, and the experience should lead to a written report.

Research and Thesis. Each Ph.D. candidate is required by the Graduate College to complete at least 24 semester hours of credit in research and dissertation work. A minimum of 24 semester hours should be completed after comprehensive exams.

Research and Thesis

Choose from the following for research requirement	6-12
EDA 792 Research (3)	
HED 792 Research (3)	
SPF 792 Research (3)	
Choose from the following for dissertation requirement	6-12
EDA 799 Dissertation (3)	
HED 799 Dissertation (3)	
SPF 799 Dissertation (3)	

Total minimum semester hours required.....24

Foreign Language Requirements. None.

Comprehensive Examinations. The examination centers on the professional focus and the cognate study and must be passed before admission to candidacy. A written examination is required; an oral examination over the written portion may be required by the student’s program committee.

Research and Dissertation. Twenty-four semester hours of research and dissertation credit are required. The dissertation must consist of a fully documented written study demonstrating a high level of research competence and scholarship in the student’s area of professional focus. The dissertation should make an original contribution to knowledge in the area of educational leadership and policy studies and be worthy of publication by an established press as a book or monograph or as one or more articles in a refereed, scholarly journal.

Dissertation Precis and Proposal. The precis is a summary of the dissertation research proposed by the student. Upon approval of the precis by the dissertation committee, the student proceeds with developing a dissertation proposal.

Final Examination. A final oral examination in defense of the dissertation is required.

COURSES

For courses, see “Educational Administration and Supervision (EDA),” page 192, “Higher and Postsecondary Education (HED),” page 236, and “Social and Philosophical Foundations (SPF),” page 322.

Educational Psychology

Master’s and Doctoral Programs

coe.asu.edu/psyched

480/965-3384

EDB 302

Samuel B. Green, Academic Program Leader

Regents’ Professor: Berliner, Glass, Smith

Professors: Barona, Blanchard, Green, Krus, Moore, Santos de Barona, Strom

Associate Professors: Nakagawa, Stafford, Wodrich

Assistant Professors: Arzubiaga, Brem, Gorin, Husman, Ladd, Thompson

Clinical Assistant Professor: Stamm

The faculty in the Division of Psychology in Education offer graduate programs leading to the M.A., M.Ed., and Ph.D. degrees in Educational Psychology. Doctoral concentrations are available in learning; lifespan developmental psychology; measurement, statistics, and methodological studies; and school psychology.

Students applying for admission to these programs should see “Admission to the Graduate College,” page 85. Applicants to these programs must submit scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination. Applicants to the M.Ed. may substitute a Miller Analogies Test score. These programs generally require a statement of purpose as well as other items. Applicants should refer to the division’s Web site at coe.asu.edu/psyched for other requirements and applicable forms.

These programs, except school psychology, accept students for fall and spring semesters. A completed graduate application and all program application materials should be received by October 15 for admission in the spring semester. For admission in the fall semester, a completed graduate application and all program application materials should be received by February 15. School psychology applicants should submit a completed graduate application and all program application materials before January 15 for fall admission.

MASTER OF EDUCATION

This program is intended for persons who wish to further prepare themselves as classroom teachers or for other positions related to instruction. The degree requires 36 semester hours of graduate course work and a written evaluation as a culminating experience. Students completing this program are not expected to continue for a Ph.D. degree in Educational Psychology at ASU.

GRADUATE PROGRAMS AND COURSES

See “Master of Education,” page 189, for more information on the degree.

MASTER OF ARTS

The program of each student is prepared in consultation with the supervisory committee, consisting of a chair and two or more additional faculty members. A minimum of 30 semester hours is required. The program must include six hours of thesis and a written comprehensive examination. Students in this program generally are preparing for doctoral studies.

See “Master’s Degrees,” page 94, for general requirements.

DOCTOR OF PHILOSOPHY

The Ph.D. degree in Educational Psychology offers the following areas of study: learning; lifespan developmental psychology; measurement, statistics, and methodological studies; and school psychology. These programs prepare students for professional positions in universities, school districts, departments of education, and industry. Complete descriptions of each area are on the division’s Web site at coe.asu.edu/psyched.

School Psychology. The faculty specializing in school psychology offer a scientist-practitioner program leading to the Ph.D. degree. The program provides preparation in academic and professional areas through course work, research, practica, and internship. Graduates are employed in school districts, behavioral health settings serving children and adolescents, and universities. The school psychology program is accredited by the American Psychological Association and approved by the National Association of School Psychologists. For more information on the faculty, the programs of study, and admission requirements, applicants should contact the Division of Psychology in Education or access the Web site at coe.asu.edu/psyched.

See “Doctor of Philosophy,” page 96, for general information on the Ph.D. degree.

RESEARCH ACTIVITY

Research in learning includes teacher education, argumentation and discourse, reading, spatial cognition, and neuropsychological development in early childhood. Research in lifespan development includes studies of preschool and family literacy programs, social and moral development, peer relations, and intergenerational relationships. Research in methodology includes quantitative and qualitative methodology, program evaluation, testing practices, and testing with computers.

School psychology research involves assessment of cognitive and academic skills, classroom processes, interventions with high-risk children and youth, informed consent, substance abuse prevention, and assessment of minority individuals, as well as ethnic and gender issues.

EDUCATIONAL PSYCHOLOGY (EDP)

EDP 502 Introduction to Data Analysis. (3)

fall, spring, summer

Descriptive statistics, visual approaches, estimation, and inferential methods for univariate and bivariate educational research problems.

Experience using statistical software. Cross-listed as COE 502. Credit is allowed for only COE 502 or EDP 502.

EDP 503 Introduction to Qualitative Research. (3)

fall, spring, summer

Terminology, historical development, approaches (including ethnography, ethnomethodology, critical theory, grounded theory, and hermeneutics), and qualitative versus quantitative social sciences; methods of inquiry. Cross-listed as COE 503. Credit is allowed for only COE 503 or EDP 503.

EDP 504 Learning and Instruction. (3)

fall, spring, summer

Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice. Cross-listed as COE 504. Credit is allowed for only COE 504 or EDP 504.

EDP 510 Essentials of Classroom Learning. (3)

fall, spring, summer

Theoretical and empirical foundations of learning in the classroom milieu. Critical exposure to research and method in instructional psychology.

EDP 513 Child Development. (3)

fall, spring, summer

Examines problems and achievements experienced by children growing up in a technological society. Emphasizes discovering the child’s perspective.

EDP 514 Psychology of the Adolescent. (3)

fall, spring, summer

Cognitive, physical, and social development of adolescents in contemporary society. Impact of family, school, and workplace on adolescent development. Prerequisite: EDP 310 or PGS 101 (or its equivalent).

EDP 530 Theoretical Issues and Research in Human Development. (3)

fall

Psychological theories, research, and methods relevant to human development, emphasizing the relations between early development and later performance.

EDP 535 Applied Behavior Analysis. (3)

fall

Principles of conditioning as applied to behavior. Current research on the experimental analysis of behavior in educational psychology.

EDP 536 Physiology of Behavioral Disorders. (3)

fall

Critical study of nervous system, brain function for fundamental behaviors, and system dysfunctions in mental/neurological disorders. Prerequisite: instructor approval.

EDP 540 Theoretical Views of Learning. (3)

fall and spring

Classical and cognitive theories of learning, plus recent orientations. Illustrative experimental and rational foundations; implications for educational practice.

EDP 542 Research Methods in the Learning Sciences. (3)

spring

Students read, design, and carry out original research in the learning sciences. Lecture, discussion. Prerequisites: EDP 540; instructor approval.

EDP 544 Psychology of Reading. (3)

fall

Alternate analyses of the reading process; designs and procedures for investigating instructional and noninstructional variables related to reading achievement.

EDP 545 Higher-Order Processes in the Learning Sciences. (3)

spring

Examines original research on induction, deduction, analogy and transfer, knowledge representation, and other issues in learning. Discussion. Prerequisite: EDP 540 or instructor approval.

EDP 550 Introduction to Measurement in Education. (3)

fall and spring

Nature and types of educational measures. Critiquing and selecting appropriate measuring devices. Constructing measuring devices. Social controversies about tests. Lecture, lab. Prerequisite: EDP 502 or equivalent course as determined by the program.

EDP 552 Multiple Regression and Correlation Methods. (3)

fall, spring, summer

Educational applications of regression techniques. Quantitative and qualitative predictors, curvilinear trends, and interactions. Emphasizes analyzing data and interpreting results. Lecture, lab. Prerequisite: EDP 502 or equivalent course as determined by the program.

EDP 554 Analysis-of-Variance Methods. (3)

fall, spring, summer

Educational applications of ANOVA techniques. Between- and within-subjects designs, multiple comparisons. Emphasizes using statistical software and interpreting results. Lecture, lab. Prerequisite: EDP 552 or equivalent course as determined by the program.

EDP 556 Data Processing Techniques in Measurement and Research. (3)

once a year

Use of statistical packages for data analysis. Emphasizes data management, data structures, and related statistical procedures. Lecture, lab. Prerequisite: EDP 552. Pre- or corequisite: EDP 554 or instructor approval.

EDP 560 Individual Intellectual Assessment. (3)

fall and spring

Issues in administration and interpretation of individual intelligence tests. Theoretical basis, ethical considerations, and diagnostic use of test results. Fee. Prerequisite: admission to a program in professional psychology or instructor approval.

EDP 561 Lab in Psychological Assessment. (3)

spring

Lab experience in administration, scoring, and interpretation of individual intelligence tests. Lab. Prerequisite: admission to a program in professional psychology or instructor approval. Corequisite: EDP 560.

EDP 562 School Psychology: Ethics, Theory, and Practice. (3)

fall

Provides information regarding the ethics, history, and theory of current school psychology practice.

EDP 563 Interventions in School Psychology. (3)

fall

Examines case-based consultation and consultation research relevant to school psychology practice. Field experience. Prerequisite: school psychology program or instructor approval.

EDP 564 Academic Interventions. (3)

spring

Skills-building course emphasizing academic interventions and outcome-based educational decisions. Prerequisite: EDP 535.

EDP 566 Diagnosis of Learning Difficulties. (3)

spring

Clinical diagnosis of learning difficulties, emphasizing specific academic problems. Use and interpretation of diagnostic instruments in practical school situations. Fee. Prerequisites: EDP 560 and 562 (or their equivalents); instructor approval.

EDP 567 School Psychological Services to Minority Students. (3)

spring

Historical perspectives and major issues in psychological and academic assessment and interventions with minority school children.

EDP 568 Diagnosis and Interventions for Children and Adolescents with Emotional Handicaps. (3)

fall

Clinical diagnosis of emotional handicaps in children and adolescents with emphasis on interpretation of diagnostic instruments and designing appropriate interventions in school settings. Lecture, lab. Fee. Prerequisites: EDP 566; PSY 578 (or its equivalent).

EDP 651 Methods and Practices of Qualitative Research. (3)

spring

Advanced course for students familiar with theory and extant work. Topics include data collection, analysis, reporting, and an extensive fieldwork project. Prerequisite: COE 503.

EDP 652 Multivariate Procedures for Data Analysis. (3)

fall

Educational applications of multivariate methods, including MANOVA, discriminant analysis, and exploratory factor analysis. Emphasizes analyzing data and reporting results. Lecture, lab. Prerequisite: EDP 554 or equivalent course as determined by the program.

EDP 654 Structural Equation Modeling in Educational Research. (3)

spring

Educational applications of confirmatory factor analysis, path analysis, and full latent variable models. Experience in conducting analyses and reporting results. Lecture, lab. Prerequisite: EDP 652 or equivalent course as determined by the program.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Educational Technology

Master's and Doctoral Programs

coe.asu.edu/psyched

480/965-7192

EDB 121

Wilhelmina C. Savenye, Academic Program Leader

Professors: Bitter, Klein, Sullivan

Associate Professor: Savenye

Assistant Professor: Atkinson

Clinical Assistant Professor: Igooe

The faculty in the Division of Psychology in Education offer graduate programs leading to the Master of Education (M.Ed.) and Doctor of Philosophy (Ph.D.) degrees in Educational Technology. The focus of these programs is on design, development, and evaluation of instructional systems and on educational technology applications to support learning. The doctoral program emphasizes research using educational technology in applied settings.

The graduate programs leading to a degree in Educational Technology prepare students for a variety of positions consistent with their professional goals. Most doctoral graduates of the program accept appointments as university or college faculty, instructional designers or evaluators in academic and business settings, or training managers in corporate environments. Employment opportunities for master's degree graduates include positions as educational technologists in schools, community colleges, and universities; and as training specialists in business and industry.

Applicants for admission to the Ph.D. degree program in Educational Technology must submit scores for the Graduate Record Examination (GRE). M.Ed. program applicants must submit scores for either the GRE or the Miller Analogies Test. All application materials should be received at least three months before the semester in which the applicant wishes to begin study.

MASTER OF EDUCATION

The M.Ed. degree in Educational Technology requires the completion of a minimum of 30 semester hours beyond the bachelor's degree, which includes 18 semester hours of required courses and 12 semester hours of electives. For a

GRADUATE PROGRAMS AND COURSES

complete description of the M.Ed. program in Educational Technology, access the Web site at coe.asu.edu/psyched. For general requirements, see "Master of Education," page 189.

DOCTOR OF PHILOSOPHY

The Ph.D. degree in Educational Technology requires a minimum of 84 semester hours beyond the bachelor's degree. The content focus of the program is on instructional design, development, evaluation, and the application of educational technology to support learning. In addition, the doctoral program has a strong emphasis on research using educational technology in applied settings. Students participate in research courses and practica that lead to conference presentations and journal publications. Each Ph.D. student must complete a comprehensive examination and satisfy a publication requirement before beginning work on their dissertation.

For a complete description of the Ph.D. in Educational Technology, access the Web site at coe.asu.edu/psyched. For more information, see "Doctor of Philosophy," page 96.

EDUCATIONAL TECHNOLOGY (EDT)

EDT 455 Authoring Tools. (3)

fall, spring, summer

Use of current authoring tools to design and deliver computer-based instructional materials.

EDT 501 Foundations and Issues in Educational Technology. (3)

fall and spring

Introduction to educational technology. Examines accomplishments and issues in the field.

EDT 502 Design and Development of Instruction. (3)

fall and spring

Design, development, and formative evaluation of objectives-based instructional materials. Prerequisite: Educational Technology major.

EDT 503 Instructional Media Design. (3)

fall and spring

Uses media selection, design, and production principles to prepare design specifications for solutions to instructional messages and products. Pre- or corequisite: EDT 502.

EDT 504 Development of Computer-Based Instruction. (3)

fall and spring

Systematic design, development, and formative evaluation of computer-based instruction. Prerequisites: EDT 455 (or instructor approval), 502.

EDT 505 Multimedia Presentation Technologies. (3)

fall

Explores the design of multimedia presentations and the utilization of tools and resources to effectively deliver those presentations. Lecture, lab.

EDT 506 Educational Evaluation. (3)

spring

Procedures for evaluating educational programs, training systems, and new-technology applications. Prerequisite: EDT 502.

EDT 511 Technology Applications in Education. (3)

fall and summer

Integration and evaluation of emerging technologies into K–12 and adult teaching and learning. Online and lecture.

EDT 520 Educational Technology and Training. (3)

spring

Applications of educational technology to training and human performance systems in business, industry, and government; emphasizing trends and project management. Lecture, lab. Prerequisites: EDT 501, 502.

EDT 523 Distance Education Theory and Practice. (3)

fall

Explores development of distance learning principles by examining national and international systems and applications. Online and lecture.

EDT 525 Web Resources for Educators. (3)

spring

Explores Web-based and distance learning applications for educators. Online and lecture.

EDT 527 Instructional Video Production. (3)

spring

Design and production of instructional video. Lecture, lab. Prerequisite: EDT 503 or instructor approval.

EDT 528 Development of Web-Based Instruction. (3)

fall

Design and development of online instruction using advanced technologies. Prerequisite: EDT 502.

EDT 531 Hypermedia. (3)

fall

Design, development, and evaluation of open-ended, nonlinear computer-based tools and applications. Lecture, lab. Prerequisites: EDT 455 (or instructor approval), 502.

EDT 701 Research in Educational Technology. (3)

spring

Review and analysis of research studies in educational technology. Methodology for designing, conducting, and reporting educational technology research. Prerequisites: EDT 501, 502; instructor approval.

EDT 702 Research in Technology-Based Education. (3)

fall

Critical exposure to theories, research, and methods in technology-based education.

EDT 703 Research in Distance Education. (3)

spring

Seminar with emphasis on research in telecommunications and distance education.

EDT 704 Emerging Technologies in Education. (3)

spring

Examines the role and impact of emerging technologies in education.

EDT 780 Advanced Instructional Development. (3)

spring

Conducting and documenting selected instructional development activities. Prerequisites: EDT 502; instructor approval.

EDT 792 Advanced Educational Technology Research. (3)

fall and spring

Design and execution of educational technology research on selected topics. Prerequisites: EDT 701; instructor approval.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Electrical Engineering

Master's and Doctoral Programs

www.eas.asu.edu/~eee

480/965-3590

ENGRC 555

Joseph C. Palais, Director of Graduate Studies

Regents' Professors: Balanis, Ferry, Heydt

Professors: Backus, Crouch, Goodnick, Gorur, Hoppensteadt, Hui, Karady, Kiaei, Kozicki, Lai, Palais, Pan, Roedel, Schroder, Shen, Si, Spanias, Tao, Thornton, Y. Zhang

Associate Professors: Aberle, Allee, Bird, Chakrabarti, Cochran, Diaz, El-Sharawy, Grondin, Holbert, Karam, Kim, Morrell, Rodriguez, Skromme, Tsakalis, Tylavsky

Assistant Professors: Ayyanar, Duman, Joo, Papandreou-Suppappola, Reisslein, Tepedelenioglu, Vasileska, J. Zhang

The faculty in the Department of Electrical Engineering offer graduate programs leading to the M.S., the Master of Science in Engineering (M.S.E.), and the Ph.D. degrees in Electrical Engineering.

The faculty also participate in offering the interdisciplinary program leading to the Ph.D. degree in the Science and Engineering of Materials; see "Science and Engineering of Materials," page 320. The faculty also participate in the Master of Engineering program; see "Engineering," page 204.

Admission. See "Admission to the Graduate College," page 85. A student whose undergraduate degree is not based on an ABET-accredited program must submit scores on the Graduate Record Exam and must have earned the equivalent of a 3.50 GPA in the final two years of study. All applicants must submit a short statement of purpose to the department. This statement must include the desired area of study within electrical engineering. Refer to the department's Web site for further information on programs, faculty, financial aid, and for admission and statement of purpose forms.

MASTER OF SCIENCE

See "Master's Degrees," page 94, for general information.

MASTER OF SCIENCE IN ENGINEERING

See "Master of Science in Engineering," page 204, for information on the M.S.E. degree.

A final written comprehensive exam is required for option two in this program. Most master's degree students are admitted to the M.S.E. program, option two. Those who

are offered financial support or who are outstanding students showing research potential are admitted to the M.S. program. A tentative program of study must be filed during the first semester enrolled for classes.

DOCTOR OF PHILOSOPHY

The Ph.D. degree in Electrical Engineering is awarded based upon evidence of excellence in research leading to a scholarly dissertation that is a contribution to knowledge.

See "Doctor of Philosophy," page 96, for general requirements.

Program of Study. The official program of study must be filed no later than the semester before all degree requirements are met.

Foreign Language Requirements. None.

Qualifying Examination. Every student must pass a qualifying examination consisting of a short research paper and an oral presentation of the research. The examination must take place before the end of the second semester in attendance at ASU.

Comprehensive Examinations. Written and oral comprehensive examinations are required before the student is admitted to candidacy. The examinations are administered by the supervisory committee.

Dissertation Requirements. A dissertation based on original work demonstrating creativity in research and scholarly proficiency in the subject area is required.

Final Examination. A final oral examination in defense of the dissertation is required.

ONLINE PROGRAMS

A wide selection of graduate-level electrical engineering courses are offered online. By taking classes over the Internet, students can complete all requirements for an M.S.E. degree from off campus. Students in the M.S. and Ph.D. programs can also utilize the online classes in their programs of study. The Ira A. Fulton School of Engineering Center for Professional Development provides support for the online classes. For more information about these programs, see "Center for Professional Development," page 69.

ARTS, MEDIA, AND ENGINEERING (AME) PROGRAM

The Electrical Engineering faculty offer the M.S.E. and Ph.D. degrees with a concentration in arts, media, and engineering in collaboration with the Departments of Computer Science and Engineering, Dance, and Theatre and the Schools of Art and Music. For more information, see "Arts, Media, and Engineering," page 129.

RESEARCH ACTIVITY

Opportunities at the master's or doctoral level are offered to students whose goals are research, development, design, manufacturing, systems, engineering management, teaching, or other professional activities in electrical engineering or related disciplines.

GRADUATE PROGRAMS AND COURSES

Research participation in the Department of Electrical Engineering is available in a broad spectrum of subjects encompassing traditional as well as new specialities. Significant research activity exists in control systems, electromagnetics and microwave circuits, electronic circuits and mixed-signal integrated circuit design, power engineering, signal processing and communication systems, and solid-state electronics, reflecting the continuing strong interest and cooperation of local industry in these disciplines. Engineering education, low-power electronics, power systems, solid-state electronics, and telecommunications have been selected for support as part of a program establishing excellence centers at ASU.

For a current list of the subjects available for research in the department, access the department's Web site at www.eas.asu.edu/~eee.

ELECTRICAL ENGINEERING (EEE)

EEE 405 Filter Design. (3)

fall

Principles of active and passive analog filter design, frequency domain approximations, sensitivity and synthesis of filters. Prerequisite: EEE 303.

EEE 407 Digital Signal Processing. (4)

fall and spring

Time and frequency domain analysis, difference equations, z-transform, FIR and IIR digital filter design, discrete Fourier transform, FFT, and random sequences. Lecture, lab. Fee. Prerequisites: EEE 303; MAT 342 (or 343).

EEE 425 Digital Systems and Circuits. (4)

fall and spring

Digital logic gate analysis and design. Propagation delay times, fan out, power dissipation, noise margins. Design of MOS and bipolar logic families, including NMOS, CMOS, standard and advanced TTL, ECL, and BiCMOS. Inverter, combinational and sequential logic circuit design, MOS memories, VLSI circuits. Computer simulations using PSPICE. Lecture, lab. Fee. Prerequisite: ECE 334.

EEE 433 Analog Integrated Circuits. (4)

fall and spring

Analysis, design, and applications of modern analog circuits using integrated bipolar and field effect transistor technologies. Lecture, lab. Fee. Prerequisite: ECE 334.

EEE 434 Quantum Mechanics for Engineers. (3)

fall

Angular momentum, wave packets, Schroedinger wave equation, probability, problems in one dimension, principles of wave mechanics, scattering, tunneling, central forces, angular momentum, hydrogen atom, perturbation theory, variational techniques. Prerequisites: ECE 352; EEE 340.

EEE 435 Microelectronics. (3)

spring

Introduces basic CMOS processing and fabrication tools. Covers the fundamentals of thermal oxidation, CVD, implantation, diffusion, and process integration. Internet lecture, Internet or on-campus lab. Fee. Pre- or corequisite: EEE 436.

EEE 436 Fundamentals of Solid-State Devices. (3)

fall and spring

Semiconductor fundamentals, pn junctions, metal-semiconductor contacts, metal-oxide-semiconductor capacitors and field-effect transistors, bipolar junction transistors. Prerequisite: ECE 352.

EEE 437 Optoelectronics. (3)

selected semesters

Basic operating principles of various types of optoelectronic devices that play important roles in commercial and communication electronics; light-emitting diodes, injection lasers, and photodetectors. Prerequisite: EEE 436.

EEE 439 Semiconductor Facilities and Cleanroom Practices. (3)

fall

Microcontamination, controlled environments, cleanroom layout and systems, modeling, codes and legislation, ultrapure water, production materials, personnel and operations, hazard management, advanced concepts. Prerequisite: EEE 435 or instructor approval.

EEE 440 Electromagnetic Engineering II. (4)

spring

Second half of an introductory course in electromagnetic theory and its application in electrical engineering. Analytical and numerical solution of boundary value problems. Advanced transmission lines; waveguides; antennas; radiation and scattering. Lecture, lab. Fee. Prerequisite: EEE 340.

EEE 443 Antennas for Wireless Communications. (3)

spring

Fundamental parameters; radiation integrals; wireless systems; wire, loop, and microstrip antennas; antenna arrays; smart antennas; ground effects; multipath. Prerequisite: EEE 340.

EEE 445 Microwaves. (4)

fall

Waveguides; circuit theory for waveguiding systems; microwave devices, systems, and energy sources; striplines and microstrips; impedance matching transformers; measurements. Lecture, lab. Fee. Prerequisite: EEE 340.

EEE 448 Fiber Optics. (4)

fall

Principles of fiber-optic communications. Lecture, lab. Fee. Prerequisites: EEE 303, 340.

EEE 455 Communication Systems. (4)

fall and spring

Signal analysis techniques applied to the operation of electrical communication systems. Introduction to and overview of modern digital and analog communications. Lecture, lab. Fee. Prerequisite: EEE 350.

EEE 459 Communication Networks. (3)

spring

Fundamentals of communication networks. Study of Seven-Layer OSI model. Focus on functionality and performance of protocols used in communication networks. Prerequisite: EEE 350.

EEE 460 Nuclear Concepts for the 21st Century. (3)

spring

Radiation interactions, damage, dose, and instrumentation. Cosmic rays, satellite effects; soft errors; transmutation doping. Fission reactors, nuclear power. TMI, Chernobyl. Radioactive waste. Prerequisite: PHY 241 or 361.

EEE 463 Electrical Power Plant. (3)

fall

Nuclear, fossil, and solar energy sources. Analysis and design of steam supply systems, electrical generating systems, and auxiliary systems. Power plant efficiency and operation. Prerequisites: ECE 201, 340 (or PHY 241).

EEE 470 Electric Power Devices. (3)

fall

Analyzes devices used for short circuit protection, including circuit breakers, relays, and current and voltage transducers. Protection against switching and lightning over voltages. Insulation coordination. Prerequisite: EEE 360.

EEE 471 Power System Analysis. (3)

spring

Review of transmission line parameter calculation. Zero sequence impedance, symmetrical components for fault analysis, short circuit calculation, review of power flow analysis, power system stability, and power system control concepts. Prerequisite: EEE 360.

EEE 473 Electrical Machinery. (3)

fall

Operating principles, constructional details, and design aspects of conventional DC and AC machines, transformers and machines used in computer disc drives, printers, wrist watches, and automobiles. Prerequisite: EEE 360.

EEE 480 Feedback Systems. (4)

fall and spring

Analysis and design of linear feedback systems. Frequency response and root locus techniques, series compensation, and state variable feedback. Lecture, lab. Fee. Prerequisite: EEE 303.

EEE 482 Introduction to State Space Methods. (3)*fall*

Discrete and continuous systems in state space form controllability, stability, and pole placement. Observability and observers. Pre- or corequisite: EEE 480.

EEE 505 Time-Frequency Signal Processing. (3)*fall*

Joint time-frequency analysis of time-varying signals and systems; linear and quadratic time-frequency representations; applications in current areas of signal processing. Prerequisite: EEE 407.

EEE 506 Digital Spectral Analysis. (3)*spring*

Principles and applications of digital spectral analysis, least squares, random sequences, parametric, and nonparametric methods for spectral estimation. Prerequisites: EEE 407, 554.

EEE 507 Multidimensional Signal Processing. (3)*fall*

Processing and representation of multidimensional signals. Design of systems for processing multidimensional data. Introduces image and array processing issues. Prerequisite: EEE 407 or instructor approval.

EEE 508 Digital Image Processing and Compression. (3)*spring*

Fundamentals of digital image perception, representation, processing, and compression. Emphasizes image coding techniques. Signals include still pictures and motion video. Prerequisites: EEE 350 and 407 (or their equivalents).

EEE 511 Artificial Neural Computation Systems. (3)*selected semesters*

Networks for computation, learning function representations from data, learning algorithms and analysis, function approximation and information representation by networks, applications in control systems and signal analysis. Prerequisite: instructor approval.

EEE 517 Hardware Design Languages. (3)*fall and spring*

Introduces hardware design languages. Modeling concepts for specification, simulation, and synthesis. Cross-listed as CSE 517. Credit is allowed for only CSE 517 or EEE 517. Fee. Prerequisite: CSE 423 or EEE 425 or instructor approval.

EEE 523 Advanced Analog Integrated Circuits. (3)*fall*

Analysis and design of analog integrated circuits: analog circuit blocks, reference circuits, operational-amplifier circuits, feedback, and nonlinear circuits. Prerequisite: EEE 433 (or its equivalent).

EEE 524 Communication Transceiver Circuits Design. (3)*selected semesters*

Communication transceivers and radio frequency system design; fundamentals of transceivers circuits; RF, IF, mixers, filters, frequency synthesizers, receivers, CAD tools, and lab work on IC design stations. Lecture, lab. Fee. Prerequisites: EEE 433 and 455 (or their equivalents). Pre- or corequisite: EEE 523.

EEE 525 VLSI Design. (3)*fall and spring*

Analysis and design of Very Large Scale Integrated (VLSI) circuits. Physics of small devices, fabrication, regular structures, and system timing. Open only to graduate students. Fee.

EEE 526 VLSI Architectures. (3)*fall*

Special-purpose architectures for signal processing. Design of array processor systems at the system level and processor level. High-level synthesis. Prerequisites: both CSE 330 and EEE 407 or only instructor approval.

EEE 527 Analog to Digital Converters. (3)*fall*

Detailed introduction to the design of Nyquist rate, CMOS analog to digital converters. Prerequisite: EEE 523.

EEE 528 Phase-Locked Loop Systems and Circuits. (3)*fall*

Fundamentals, concepts of system analysis and design, and principles that apply to phase-locked loops (PLLs) used in frequency synthesis. Prerequisite: EEE 433. Pre- or corequisite: EEE 523.

EEE 529 Mixed-Signal Circuit Design. (3)*spring*

Analysis and design of mixed-signal integrated circuits with emphasis in CMOS technology. Prerequisites: EEE 523, 525.

EEE 530 Advanced Silicon Processing. (3)*spring*

Thin films, CVD, oxidation, diffusion, ion-implantation for VLSI, metallization, silicides, advanced lithography, dry etching, rapid thermal processing. Pre- or corequisite: EEE 435.

EEE 531 Semiconductor Device Theory I. (3)*fall*

Transport and recombination theory, pn and Schottky barrier diodes, bipolar and junction field-effect transistors, and MOS capacitors and transistors. Prerequisite: EEE 436 (or its equivalent).

EEE 532 Semiconductor Device Theory II. (3)*spring*

Advanced MOSFETs, charge-coupled devices, solar cells, photodetectors, light-emitting diodes, microwave devices, and modulation-doped structures. Prerequisite: EEE 531.

EEE 533 Semiconductor Process/Device Simulation. (3)*fall*

Process simulation concepts, oxidation, ion implantation, diffusion, device simulation concepts, pn junctions, MOS devices, bipolar transistors. Prerequisite: EEE 436 (or its equivalent).

EEE 534 Semiconductor Transport. (3)*spring*

Carrier transport in semiconductors. Hall effect, high electric field, Boltzmann equation, correlation functions, and carrier-carrier interactions. Prerequisites: EEE 434, 436 (or 531).

EEE 535 Electron Transport in Nanostructures. (3)*spring*

Nanostructure physics and applications. 2-D electron systems, quantum wires and dots, ballistic transport, quantum interference, and single-electron tunneling. Prerequisites: EEE 434, 436.

EEE 536 Semiconductor Characterization. (3)*spring*

Measurement techniques for semiconductor materials and devices. Electrical, optical, physical, and chemical characterization methods. Prerequisite: EEE 436 (or its equivalent).

EEE 537 Semiconductor Optoelectronics I. (3)*fall*

Electronic states in semiconductors, quantum theory of radiation, absorption processes, radiative processes, nonradiative processes, photoluminescence, and photonic devices. Prerequisites: EEE 434, 436 (or 531).

EEE 538 Semiconductor Optoelectronics II. (3)*selected semesters*

Material and device physics of semiconductor lasers, light-emitting diodes, and photodetectors. Emerging material and device technology in III-V semiconductors. Prerequisite: EEE 537.

EEE 539 Introduction to Solid-State Electronics. (3)*fall*

Crystal lattices, reciprocal lattices, quantum statistics, lattice dynamics, equilibrium, and nonequilibrium processes in semiconductors. Prerequisite: EEE 434.

EEE 540 Fast Computational Electromagnetics. (3)*selected semesters*

Method of moments, finite difference time-domain, finite element methods implemented using fast algorithms (wavelets, FMM, Nystrom) to gain high efficiency. Prerequisite: EEE 440.

EEE 541 Electromagnetic Fields and Guided Waves. (3)*selected semesters*

Polarization and magnetization; dielectric, conducting, anisotropic, and semiconducting media; duality, uniqueness, and image theory; plane wave functions, waveguides, resonators, and surface guided waves. Prerequisite: EEE 440 (or its equivalent).

EEE 543 Antenna Analysis and Design. (3)*fall*

Impedances, broadband antennas, frequency independent antennas, miniaturization, aperture antennas, horns, reflectors, lens antennas, and continuous sources design techniques. Prerequisite: EEE 443 (or its equivalent).

GRADUATE PROGRAMS AND COURSES

EEE 544 High-Resolution Radar. (3)

selected semesters

Fundamentals; wideband coherent design, waveforms, and processing; stepped frequency; synthetic aperture radar (SAR); inverse synthetic aperture radar (ISAR); imaging. Prerequisites: EEE 303 and 340 (or their equivalents).

EEE 545 Microwave Circuit Design. (3)

spring

Analysis and design of microwave attenuators, in-phase and quadrature-phase power dividers, magic tee's, directional couplers, phase shifters, DC blocks, and equalizers. Prerequisite: EEE 445 or instructor approval.

EEE 546 Advanced Fiber Optics. (3)

selected semesters

Theory of propagation in fibers, couplers and connectors, distribution networks, modulation, noise and detection, system design, and fiber sensors. Prerequisite: EEE 448 or instructor approval.

EEE 547 Microwave Solid-State Circuit Design I. (3)

spring

Applies semiconductor characteristics to practical design of microwave mixers, detectors, limiters, switches, attenuators, multipliers, phase shifters, and amplifiers. Prerequisite: EEE 545 or instructor approval.

EEE 548 Coherent Optics. (3)

selected semesters

Diffraction, lenses, optical processing, holography, electro-optics, and lasers. Prerequisite: EEE 440 (or its equivalent).

EEE 549 Lasers. (3)

selected semesters

Theory and design of gas, solid, and semiconductor lasers. Prerequisite: EEE 448 or instructor approval.

EEE 550 Transform Theory and Applications. (3)

selected semesters

Introduces abstract integration, function spaces, and complex analysis in the context of integral transform theory. Applications to signal analysis, communication theory, and system theory. Prerequisite: EEE 303.

EEE 551 Information Theory. (3)

selected semesters

Entropy and mutual information, source and channel coding theorems, applications for communication and signal processing. Prerequisite: EEE 554.

EEE 552 Digital Communications. (3)

spring

Complex signal theory, digital modulation, optimal coherent and incoherent receivers, channel codes, coded modulation, Viterbi algorithm. Prerequisite: EEE 554.

EEE 553 Coding and Cryptography. (3)

selected semesters

Introduces algebra, block and convolutional codes, decoding algorithms, turbo codes, coded modulation, private and public key cryptography. Prerequisite: EEE 554.

EEE 554 Random Signal Theory. (3)

fall

Applies statistical techniques to the representation and analysis of electrical signals and to communications systems analysis. Prerequisite: EEE 350 or instructor approval.

EEE 555 Modeling and Performance Analysis. (3)

selected semesters

Modeling and performance analysis of stochastic systems and processes such as network traffic queuing systems and communication channels. Prerequisite: EEE 554.

EEE 556 Detection and Estimation Theory. (3)

selected semesters

Combines the classical techniques of statistical inference and the random process characterization of communication, radar, and other modern data processing systems. Prerequisites: EEE 455, 554.

EEE 557 Broadband Networks. (3)

fall

Physics of wireless and optical communications. Broadband multiplexing and switching methods. Blocking and queuing analysis. Network optimization, routing, and economics. Prerequisite: EEE 350.

EEE 558 Wireless Communications. (3)

fall

Cellular systems, path loss, multipath fading channels, modulation and signaling for wireless, diversity, equalization coding, spread spectrum, TDMA/FDMA/CDMA. Prerequisite: EEE 552.

EEE 571 Power System Transients. (3)

spring

Simple switching transients. Transient analysis by deduction. Damping of transients. Capacitor and reactor switching. Transient recovery voltage. Travelling waves on transmission lines. Lightning. Protection of equipment against transient overvoltages. Introduces computer analysis of transients. Prerequisite: EEE 471.

EEE 572 Advanced Power Electronics. (3)

fall

Analyzes device operation, including thyristors, gate-turn-off thyristors, and transistors. Design of rectifier and inverter circuits. Applications such as variable speed drives, HVDC, motor control, and uninterruptible power supplies. Prerequisite: EEE 470.

EEE 573 Electric Power Quality. (3)

spring

Sinusoidal waveshape maintenance; study of momentary events, power system harmonics, instrumentation, filters, power conditioners, and other power quality enhancement methods. Prerequisite: EEE 360 (or its equivalent).

EEE 574 Computer Solution of Power Systems. (3)

selected semesters

Algorithms for digital computation for power flow, fault, and stability analysis. Sparse matrix and vector programming methods, numerical integration techniques, stochastic methods, solution of the least squares problem. Prerequisite: EEE 471.

EEE 577 Power Engineering Operations and Planning. (3)

fall

Economic dispatch, unit commitment, dynamic programming, power system planning and operation, control, generation modeling, AGC, and power production. Prerequisite: EEE 471 or graduate standing.

EEE 579 Power Transmission and Distribution. (3)

spring

High-voltage transmission line electric design; conductors, corona, RI and TV noise, insulators, clearances. DC characteristic, feeders voltage drop, and capacitors. Prerequisite: EEE 470.

EEE 581 Filtering of Stochastic Processes. (3)

selected semesters

Modeling, estimation, and filtering of stochastic processes, with emphasis on the Kalman filter and its applications in signal processing and control. Prerequisites: EEE 482, 550, 554.

EEE 582 Linear System Theory. (3)

selected semesters

Controllability, observability, and realization theory for multivariable continuous time systems. Stabilization and asymptotic state estimation. Disturbance decoupling, noninteracting control. Prerequisite: EEE 482.

EEE 584 Internship. (3)

selected semesters

Work performed in an industrial setting that provides practical experience and adds value to the classroom and research learning processes.

EEE 585 Digital Control Systems. (3)

selected semesters

Analysis and design of digital and sampled data control systems, including sampling theory, z-transforms, the state transition method, stability, design, and synthesis. Prerequisites: EEE 482, 550.

EEE 586 Nonlinear Control Systems. (3)

selected semesters

Stability theory, including phase-plane, describing function, Liapunov's method, and frequency domain criteria for continuous and discrete, nonlinear, and time-varying systems. Prerequisite: EEE 482.

EEE 587 Optimal Control. (3)

selected semesters

Optimal control of systems. Calculus of variations, dynamic programming, linear quadratic regulator, numerical methods, and Pontryagin's principle. Cross-listed as MAE 507. Credit is allowed for only EEE 587 or MAE 507. Prerequisite: EEE 482 or MAE 506.

EEE 588 Design of Multivariable Control Systems. (3)*selected semesters*

Practical tools for designing robust MIMO controllers. State feedback and estimation, model-based compensators, MIMO design methodologies, CAD, real-world applications. Prerequisite: EEE 480 (or its equivalent).

EEE 591 Seminar. (1–12)*selected semesters*

Topics may include the following:

- Analog Integrated Circuits
Fee.
- Communication Systems
- Digital Signal Processing
Fee.
- Digital Systems and Circuits
- Electromagnetic Engineering II
- Feedback Systems
- Fiber Optics
- Microelectronics
Fee.
- Microwaves
- Real-Time DSP
Fee. Credit is allowed for only EEE 591 or 498.

EEE 606 Adaptive Signal Processing. (3)*fall*

Principles/applications of adaptive signal processing, adaptive linear combiner, Wiener least-squares solution, gradient search, performance surfaces, LMS/RLS algorithms, block time/frequency domain LMS. Prerequisites: EEE 506, 554.

EEE 607 Speech Coding for Multimedia Communications. (3)*spring*

Speech and audio coding algorithms for applications in wireless communications and multimedia computing. Prerequisite: EEE 407. Pre- or corequisite: EEE 506.

EEE 631 Heterojunctions and Superlattices. (3)*fall*

Principles of heterojunctions and quantum well structures, band line-ups, optical, and electrical properties. Introduces heterojunction devices. Prerequisites: EEE 436, 531.

EEE 641 Advanced Electromagnetic Field Theory. (3)*selected semesters*

Cylindrical wave functions, waveguides, and resonators; spherical wave functions and resonators; scattering from planar, cylindrical, and spherical surfaces; Green's functions. Prerequisite: EEE 541 (or its equivalent).

EEE 643 Advanced Topics in Electromagnetic Radiation. (3)*spring*

High-frequency asymptotic techniques, geometrical and physical theories of diffraction (GTD and PTD), moment method (MM), radar cross section (RCS) prediction, Fourier transforms in radiation, and synthesis methods. Prerequisite: EEE 543.

EEE 647 Microwave Solid-State Circuit Design II. (3)*fall*

Practical design of microwave free-running and voltage-controlled oscillators using Gunn and Impatt diodes and transistors; analysis of noise characteristics of the oscillator. Prerequisites: EEE 545, 547.

EEE 684 Internship. (1–2)*fall, spring, summer*

Work performed in an industrial setting that provides practical experience and adds value to the classroom and research learning processes.

EEE 686 Adaptive Control. (3)*selected semesters*

Main topics covered: adaptive identification, convergence, parametric models, performance and robustness properties of adaptive controllers, persistence of excitation, and stability. Prerequisites: both EEE 582 and 586 or only instructor approval.

EEE 731 Advanced MOS Devices. (3)*spring*

Threshold voltage, subthreshold current, scaling, small geometry effects, hot electrons, and alternative structures. Prerequisite: EEE 531.

EEE 784 Internship. (3)*selected semesters*

Work performed in an industrial setting that provides practical experience and adds value to the classroom and research learning processes.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Elementary Education

Postbaccalaureate Program

The ASU East education courses below have been created as part of the postbaccalaureate program in Elementary Education. The postbaccalaureate program combines 400- and 500-level courses to fulfill the course work requirements leading to K–8 state certification. For information about the program, call the ASU East Education Office at 480/727-1103.

EARLY CHILDHOOD EDUCATION (EAC)**EAC 494 Special Topics. (1–4)***selected semesters***EAC 594 Conference and Workshop. (1–12)***selected semesters***EAC 598 Special Topics. (1–4)***selected semesters*

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

ELEMENTARY EDUCATION (EDC)**EDC 560 Principles of Instructional Technology. (3)***fall, spring, summer*

Examines effective practices related to instructional technologies, including classroom delivery, student engagement, and evaluation of resources. Prerequisite: approval of ASU East Education Office.

EDC 562 Planning and Designing Curriculum with Media. (3)*fall, spring, summer*

Planning and design of curriculum and effective learning experiences supported by technology to maximize student learning. Prerequisite: EDC 560 or department approval.

EDC 565 Research-Based Phonics for the K–8 Classroom. (3)*fall, spring, summer*

Current research in phonics instruction, including systematic and analytic approaches, and their application to classroom practice. Interactive forum. Prerequisites: EDC 465 (or its equivalent); approval of ASU East Education Office.

EDC 568 Developing and Using Video in Instruction. (3)*fall, spring, summer*

Techniques for developing and using video for instruction; methods and materials for teaching video production in schools.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

ENGLISH AS A SECOND LANGUAGE (ELL)**ELL 484 Internship. (1–12)***selected semesters***ELL 494 Special Topics. (1–4)***selected semesters***ELL 584 Internship. (1–12)***selected semesters***ELL 594 Conference and Workshop. (1–12)***selected semesters*

GRADUATE PROGRAMS AND COURSES

ELL 598 Special Topics. (1–4)
selected semesters

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 50.

Elementary Education

Master's Program

ASU West offers a Master of Education (M.Ed.) degree in Elementary Education. For information, see the *ASU West Catalog*, call 602/543-4567, or access www.west.asu.edu on the Web.

Engineering

Master's Programs

MASTER OF ENGINEERING—M.ENG.

Arizona's three state universities—Arizona State University, Northern Arizona University, and the University of Arizona—are cooperating in offering a tri-university degree program: the Master of Engineering (M.Eng.).

The M.Eng. program is intended to meet the educational needs of Arizona's practicing engineers. With input from industry professionals, the three universities are developing courses that address the enhancement and development of skills, knowledge, and understanding that are critical to today's practicing engineer. These courses are offered through a variety of distance-delivery methods and in flexible formats. Students enrolled in the program are able to take advantage of course offerings at any of the three universities. These offerings reflect the diversity of strengths across the state. Students enrolled in Web-delivered courses may incur a special course fee. For more information, see the M.Eng. Web site at triuniv.engr.arizona.edu.

The M.Eng. program offers students the opportunity to identify an engineering emphasis in traditional academic areas of study (electrical engineering, mechanical engineering, for example), nontraditional areas of study (transportation, semiconductor process and manufacturing, for example) or student-initiated areas of study (interdisciplinary).

Admission. For application materials, students may visit the program's Web site at triuniv.engr.arizona.edu.

Applicants who have graduated from accredited U.S. institutions and who have a suitable background for the desired field of study must have a minimum grade point average of 3.00 (on a 4.00 scale) for the last 60 units of the undergraduate transcript (or for the last 12 units of the post-baccalaureate transcript). The Graduate Record Exam (GRE) may be required for a particular area of study or concentration. Graduates of non-U.S. institutions must satisfy admission requirements in addition to those specified above.

Individuals not meeting the requirements for regular admission may be recommended for provisional admission or deferred admission status at the discretion of the M.Eng. Admission Committee. Upon completion of recommended course work, provisional and/or deferred admission status students may be elevated to regular status. Refer to the M.Eng. Web site for program admission details.

Individuals wanting to take courses offered in the M.Eng. program while not seeking a degree, are encouraged to obtain nondegree admission status through the Graduate College.

Program of Study. Graduate College requirements of the home institution must be followed. All programs of study require the completion of at least 30 semester hours of graduate credit. Each program of study requires three semester hours of course work in each of the following subject areas: engineering management/business and applied engineering mathematics.

All students are expected to take at least 10 semester hours from their home institution. During the first month of the semester in which the 10th semester hour is taken, the M.Eng. student should prepare a program of study. Once the program of study has been approved by the student's advisory committee, it should be forwarded for approval by the campus director of the home institution. See the M.Eng. Web site for detailed information regarding the program of study.

At the discretion of an academic unit or academic working group, a practice-oriented project may constitute a limited part of the program of study not to exceed six semester hours. Students must maintain a minimum GPA of 3.00 in courses taken as part of their program of study and maintain a 3.00 or higher for all graduate courses (500-level or above).

Foreign Language Requirements. None.

Thesis Requirements. None.

Capstone Event. An appropriate capstone event is defined and managed by the student's advisory committee. A capstone event could include, but is not limited to, the following: a written and/or oral defense of an applied project; a final examination that captures the essence of the master's degree focus and represents a major portion of the student's course work; or an overview presentation incorporating knowledge gained from the program with integration and reflection of learning as applied to the job. The student's advisory committee has the authority to determine the format of the capstone event.

Time Limit. The time limit for completing the M.Eng. degree is six years from the time of admission.

MASTER OF SCIENCE IN ENGINEERING

The faculty in the Ira A. Fulton School of Engineering offer professional programs leading to the Master of Science in Engineering (M.S.E.) degree with majors in Aerospace Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Engineering Science, Industrial Engineering, Materials Engineering, and Mechanical Engineering. The programs are designed to bridge the gap

between knowledge of engineering sciences and creative engineering practice while at the same time increasing the depth and breadth of knowledge in selected areas of emphasis. The pattern of course work applicable to the degree is potentially unique for each student, although it must conform to the general guidelines for subject matter content for the degree as authorized in the *Graduate Catalog*.

Two options are available within the M.S.E. degree program. Option one requires a thesis and is designed primarily for full-time students. Option two is designed for full-time students not intending to write a thesis and for students who hold full-time jobs and must attend university classes on a part-time basis. A thesis or equivalent is not required of students who elect this option.

Admission. Applicants are expected to satisfy all requirements for admission to the Graduate College. Entry into this program normally requires a bachelor's degree with a major in engineering or in a closely related bachelor's degree program.

Deficiencies for admission to the graduate degree programs are specified at the time of admission. The verbal, quantitative, and analytical components of the Graduate Record Examination (GRE) are recommended but not required unless specified by the respective academic unit in which the major is offered. TOEFL scores must be submitted by international applicants before admission is considered. Applicants with TOEFL scores of 550 or higher may be regularly admitted without requiring further language study. Applicants with scores below 550 may be regularly admitted but must complete study in ASU's American English and Culture Program (AEC) before enrolling in course work in the academic program.

Program of Study. In general, all candidates for the M.S.E. degree program are required to complete 30 semester hours. Additional courses may be assigned by the supervisory committee depending on the background of the candidate.

Option 1. A minimum of six semester hours of research and thesis credit must be included in the 30 hours.

Option 2. A minimum of 30 semester hours and a comprehensive examination are required.

Foreign Language Requirements. None.

Thesis Requirements. Only students who elect option one are required to write a thesis.

Final Examination. A final oral examination in defense of the thesis is required for students who choose option one. A final comprehensive examination is required for students in option two. Examination format and times should be obtained from the academic unit.

CENTER FOR PROFESSIONAL DEVELOPMENT

As a unit of the Ira A. Fulton School of Engineering, the Center for Professional Development (CPD) provides engineers and technical professionals the skills and knowledge

necessary to master new methods, to lead projects and teams, and to advance professionally. Programs are offered in traditional classroom environments and through distance learning. By leveraging the nationally renowned faculty of the school and affiliate experts, CPD administers short courses and conferences, professional certification programs, off-campus graduate degree programs, and in-company customized programs.

The school offers a growing list of M.S.E. programs to engineering professionals globally. We understand that adult students have professional, family, and community responsibilities in addition to their educational goals. We strive to provide convenient and high-quality programs while ensuring high academic standards.

Distance Learning Programs for Engineering Professionals

The distance learning programs are offered to professionals seeking flexible "anytime, anyplace" off-campus education programs. A broad portfolio of programs offers engineering and technical professionals new strategies, tools and methods, and technology to remain competitive in the New Economy. In general, professionals pursuing the M.S.E. distance learning programs have two or more years of professional experience and are sponsored by their employer through tuition benefit programs. Traditional program areas include electrical engineering, materials science engineering, chemical engineering, industrial engineering and non-traditional specialty areas such as semiconductor processing and manufacturing. Executive-focused programs are offered through the M.S.E. in Engineering Sciences with a concentration in executive embedded systems engineering.

For more information, access the school's Web site at www.asuengineeringonline.com.

COURSES

For disciplinary courses, refer to the catalog section for the major.

ANALYSIS AND SYSTEMS (ASE)

ASE 582 Linear Algebra in Engineering. (3)

fall

Development and solution of systems of linear algebraic equations. Applications from mechanical, structural, and electrical fields of engineering. Prerequisite: MAT 242 (or its equivalent).

ASE 586 Partial Differential Equations in Engineering. (3)

spring

Development and solution of partial differential equations in engineering. Applications in solid mechanics, vibrations, and heat transfer. Prerequisites: MAT 242, 274.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

ENGINEERING CORE (ECE)

ECE 500 Research Methods. (1-12)

selected semesters

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Engineering Science

Master's and Doctoral Programs

www.eas.asu.edu/~cme

480/965-3313

Subhash Mahajan, Chair

Regents' Professor: Mayer

Professors: Adams, Alford, Dey, Krause, Mahajan, Newman, Picraux, Sieradzki

Associate Professors: Chawla, Van Schilfgaarde

The faculty of the Ira A. Fulton School of Engineering offer graduate programs leading to the M.S., the M.S.E., and the Ph.D. degrees in Engineering Science. Faculty offer programs of a special and interdisciplinary nature. An area of study is also available in materials science and engineering. For more information, contact the Department of Chemical and Materials Engineering. See "Master's Degrees," page 94, and "Doctor of Philosophy," page 96, for information.

Executive focused programs are offered through the M.S.E. in Engineering Sciences with a concentration in executive embedded systems engineering. For more information, access the Web site at asuengineeringonline.com.

Graduate Record Examination. Graduate Record Examination (GRE) scores are required from all applicants.

MATERIALS SCIENCE AND ENGINEERING

Faculty members who advise students in this area of study are located within the Department of Chemical and Materials Engineering. Courses offered carry the MSE prefix; see "Materials Science and Engineering," page 265.

For more information call 480/965-3313, send e-mail to cmerec@asu.edu, or visit ECG 202.

Each student admitted as a regular degree candidate is required to complete an approved program of study. Students who have an undergraduate degree in an area other than materials science, or a similarly named program, may qualify for admission to a transition program and may be required to take one or more undergraduate courses in preparation for enrollment in graduate courses in materials science and engineering. The program of study of transition students is determined by the student's supervisory committee after review of the student's academic record.

Research activities in materials science and engineering include growth, processing and characterization of electronic materials; electroceramics; deformation behavior of materials at different length scales; computational materials science; and nanoscience and nanotechnology. Some of the research projects that are currently being pursued are growth of group III nitrides by organometallic vapor phase

epitaxy and molecular beam epitaxy and their fabrication into high frequency, high power, and high temperature devices; fabrication of spintronic devices for very high frequency applications; synthesis of high k dielectric films by organometallic vapor phase epitaxy and correlation of properties with microstructures; process-induced defects in implantation and annealing of GaN; creep and thermal fatigue behaviors of lead-free solder balls used in electronic packaging; modeling of the evolution of thin film microstructures; and synthesis and characterization of quantum dots.

Courses

Graduate courses offered by the Ira A. Fulton School of Engineering that apply to degree requirements are listed under degree majors in this catalog.

For students in the area of materials science and engineering, see "Materials Engineering," page 264.

English

Master's and Doctoral Programs

www.asu.edu/clas/english/gradstudies/enggrad.htm

480/965-3168

LL 542

Neal Lester, Chair

Regents' Professors: Carlson, Dubie, Ríos

Professors: Adams, Bjork, Boyer, Brack, Candelaria, Crowley, Goldberg, Gutierrez, Helms, Hogue, Horan, Kehl, Lester, Major, Miller, A. Nilsen, D. Nilsen, Rhodes, Roen, Tobin, van Gelderen

Associate Professors: Bates, Bivona, Castle, Chancy, Corse, DeLamotte, M. Goggin, Johnson, Lussier, Mahoney, McNally, Nelson, Perry, Pritchard, Ramage, Savard, Schwalm, Tohe, Voaden

Assistant Professors: Blasingame, Fox, P. Goggin, Lockard, Milun, Parchesky, Webb

Senior Lecturers: Cook, Cooper, Duerden, Dugan, Dwyer, Fuse, Heenan, Norton, Sudol, Wheeler

Lecturers: Binkley, Duttagupta, Standliff

Academic Professionals: Glau, McNeil

The faculty in the Department of English offer the M.A. degree in English, the Master of Teaching English as a Second Language degree, and the Ph.D. degree in English.

Students admitted to the Master of Education degree program with a major in Secondary Education may also elect English as the subject matter field. For more information, see "Master of Education," page 189.

Students may also pursue an interdisciplinary program leading to the Master of Fine Arts degree in Creative Writing, offered by the faculties in the Departments of English and Theater. See “Master of Fine Arts,” page 172.

MASTER OF ARTS

This degree is designed to provide further cultural and professional advancement for students of English.

Admission Requirements. The department requires that applicants have an undergraduate degree and a 3.00 GPA in courses taken in the major field. Deadline for admission applications and requests for financial assistance, including teaching assistantships is February 1. Incomplete files are not considered.

Applicants for the M.A. program in English with a concentration in literature are required to have an undergraduate major in English. Those who do not have a major in English are encouraged to register as nondegree students while they take courses in areas of deficiency as identified by the advisor. Applicants must also submit Graduate Record Examination (GRE) general test scores, three letters of recommendation, a personal statement of aims and purposes, and an academic writing sample.

Applicants for the M.A. program in English with a concentration in linguistics and with a concentration in rhetoric and composition may have undergraduate majors in fields such as, but not limited to, anthropology, applied linguistics, cognitive science, communication, comparative languages and literatures, education, English literature, history, law, linguistics, modern languages, philosophy, political science, psychology, religion, rhetoric/composition, sociology, and speech and hearing science. Students should consult with an advisor to determine whether their preparation is deficient in any area. Applicants must also submit three letters of recommendation and a personal statement of aims and purposes. Applicants for the rhetoric and composition concentration must also submit Graduate Record Examination (GRE) general test scores and an academic writing sample. Applicants for the linguistics concentration must show completion of one upper-division course in a linguistics-related field.

Applicants for the M.A. program in English with a concentration in comparative literature must prove fluency in a foreign language to a level sufficient for graduate study. Applicants must also submit three letters of recommendation and a statement of aims and purposes.

Program of Study. A student may pursue a concentration in comparative literature, English linguistics, literature and language, or rhetoric and composition.

For the concentration in comparative literature, a candidate must complete 36 semester hours of graduate courses, with a minimum of 12 hours being taken in the Department of Languages and Literatures. Included in the hours must be ENG 500 Research Methods; ENG 503 Comparative Literature, Theory, and Practice; and ENG 599 Thesis.

For the concentration in English linguistics, a candidate must complete a minimum of 30 semester hours of graduate-level courses. Two tracks are available. The general linguistics track must include LIN 500, 511, 514, and 515 and

one advanced linguistics course. The Applied Linguistics track must include LIN 500; 511 or 514; 515 or 516; and 520 and a course from a selection of advanced linguistics courses. Both tracks require six hours of LIN 599 Thesis. Electives are chosen in consultation with the advisor.

For the concentration in literature and language, a candidate must complete a minimum of 30 semester hours. The hours must include ENG 500 Research Methods; a course in literary theory; ENG 599 Thesis; and a nine-hour distribution requirement. Two courses selected must be graduate seminars at the 600-level. Electives are chosen in consultation with the advisor.

For the concentration in rhetoric and composition, a candidate must complete a minimum of 30 hours of graduate courses. These hours must include ENG 500 Research Methods, a course in rhetoric theory, a course in composition theory, a six-hour thesis, and 15 elective course hours that must include six semester hours of graduate seminars at the 600-level. Electives are chosen in consultation with the advisor.

Foreign Language Requirements. A reading knowledge of a suitable natural language is required and must be approved by the student’s advisor.

Comprehensive Examination. A comprehensive examination is required for students in the comparative literature concentration. (A detailed description of its scope is available in the Department of English.)

Thesis Requirements. A thesis is required.

Final Examination. A final oral examination in defense of the thesis is required.

M.TESL

The Master of Teaching English as a Second Language degree is designed for students who seek a professionally oriented graduate education. For information, see “Teaching English as a Second Language,” page 338.

DOCTOR OF PHILOSOPHY

See “Doctor of Philosophy,” page 96, for general requirements.

Admission Requirements. Applicants for the Ph.D. degree in English must submit three letters of recommendation, a personal statement of aims and purposes, and an academic writing sample. GRE general scores are required for both concentrations. The GRE advanced literature section is required for the literature concentration. Deadline for admission applications and requests for financial aid, including teaching assistantships, is February 1. Incomplete files are not considered.

Areas of Concentration. The Ph.D. degree in English offers concentrations in the following areas:

Literature. At least 60 semester hours of graduate courses (exclusive of dissertation) beyond the bachelor’s degree constitute the formal course preparation. Specifically required are six semester hours in theory courses and ENG 500 Research Methods. Students must complete (or have completed at the master’s level or its equivalent) one

GRADUATE PROGRAMS AND COURSES

graduate course in eight of the following 10 categories: Literature to 1500, Literature 1500-1660, Literature 1660-1900, Literature since 1900, Genre, Gender Studies, Ethnic Studies, Postcolonial/Anglophone literatures, Cultural Studies, and History/Structure of the English Language. Students must take at least five graduate seminars at the 600-level en route to the Ph.D. degree, at least three of which must be taken in the Ph.D. program. Up to 12 semester hours taken outside the department may be counted toward the degree. Students should consult with their supervisory committees when choosing electives.

Foreign Language Requirements. Students must demonstrate evidence of a competent reading knowledge of two languages other than modern English. These are to be selected by the student, subject to the approval of the chair of the dissertation committee. The language requirement must be completed before the student is eligible to take part in the Ph.D. exams.

Rhetoric/Composition and Linguistics. A minimum of 60 semester hours of graduate courses (exclusive of dissertation) beyond the bachelor's degree constitutes the formal course preparation. Specifically required are ENG 500 Research Methods, a 12-semester-hour foundation distribution (one course in rhetoric, one course in composition studies, and two courses in linguistics), and a 12-semester-hour advanced studies distribution requirement that consists of courses at the 600-level required by the distribution from one area of study (rhetoric, composition, or linguistics), or a combination of areas in which the student would like to concentrate. Up to 12 semester hours of course work taken outside the department may be counted toward the degree. Students should consult with an advisor when choosing these courses.

Foreign Language Requirements. Students must demonstrate evidence of a competent reading knowledge of a language other than modern English. The language can be selected by the student, in consultation with the supervisory committee. The language requirement must be completed before the student is eligible to take Part I of the Ph.D. exams. This requirement may be met by:

1. earning a "B" (3.00) or higher in a 400- or 500-level course in an appropriate (approved) language;
2. demonstrating comparable proficiency by taking a language examination approved by the student's supervisory committee;
3. demonstrating native speaker proficiency in a language approved by the student's supervisory committee;
4. earning a "B" (3.00) or higher in both ENG 530 Old English and ENG 531 Old English Literature or their equivalent.

Ph.D. Examinations. The Ph.D. examination consists of three parts. Part I is a portfolio of three essays, representing different historical periods or fields of concentration and employing more than one critical approach. After successful completion of Part I, the student may advance to Part II, a

three-hour written examination in the student's area of specialization based on a bibliography compiled by the student and approved by the student's supervisory committee. Part III is a colloquy, based on a written prospectus, defining the topic, scope, and significance of the dissertation.

Dissertation Requirements. (See "Research and Dissertation Requirements," page 98.) The subject of the dissertation is decided in consultation with the chair of the student's supervisory committee, subject to approval of the director of the Ph.D. program.

Final Examination. A final examination in defense of the dissertation, arguing for its method and conclusions, is required.

RESEARCH ACTIVITY

Research in English and its various subdisciplines fall into three broad areas of inquiry:

1. historical/textual studies;
2. comparative/interdisciplinary studies; and
3. pedagogical/theoretical studies.

The first category (historical/textual studies) concerns the production, preparation, and publication of texts and explores the historical context of publication. Work in this area encompasses the writing of the creative writing faculty as well as the historical/material criticism of rhetoricians, linguists, and literary historians.

Research in the second category (comparative/interdisciplinary studies) analyzes the dynamic play of language across cultures and disciplines and seeks to establish critical difference and similitude as the vehicle for comprehending the function of language and texts in a broadened context that includes all literatures and disciplines.

The third category (pedagogical/theoretical studies) involves the theory and practice of those subdisciplines currently defining "English Studies." A concern for operative theories and efficacious practices involves every component of the department, encouraging the exploration of how language and literature interact in the subdisciplines and within wider spheres of cultural authority. For more information about faculty publications and specializations, access the Web site at www.asu.edu/clas/english/who/name.html.

ENGLISH (ENG)

ENG Note 1. Completion of the First-Year Composition requirement (ENG 101 and 102 [or 105] or ENG 107 and 108 with a grade of "C" (2.00) or higher) is a prerequisite for all English courses above the 100 level.

ENG Note 2. A term paper or equivalent out-of-class written work is required in all upper-division (300- and 400-level) ENG courses.

ENG Note 3. English majors and minors are expected to have completed ENG 200 before taking 400-level literature courses.

ENG 400 History of Literary Criticism. (3)

selected semesters

Major critics and critical traditions in the Western world. See ENG Notes 1, 2, 3. Prerequisite: 6 hours in literature or instructor approval.

ENG 401 Topics in Critical Theory. (3)*selected semesters*

Major critical schools of recent decades—postcolonialist, psychoanalytic, deconstructionist, feminist, new historicist. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: 6 hours in literature or instructor approval.

ENG 409 Advanced Screenwriting. (3)*selected semesters*

Applies the principles taught in a complete feature-length screenplay. See ENG Notes 1, 2. Prerequisite: instructor approval.

ENG 411 Advanced Creative Writing. (3)*fall and spring*

Poetry, fiction, and drama for experienced writers, emphasizing individual style. Each genre may be taken once. See ENG Notes 1, 2. Prerequisite: ENG 310 or instructor approval.

ENG 412 Creative Nonfiction. (3)*selected semesters*

Lectures, discussion, and criticism concerning techniques of writing creative nonfiction for publication. See ENG Notes 1, 2. Prerequisite: ENG 310 or 411 or instructor approval.

ENG 413 History of the English Language. (3)*once a year*

Development of English from the earliest times to the modern period. See ENG Notes 1, 2. Prerequisite: junior standing or instructor approval.

ENG 415 Topics in Medieval Literature and Culture. (3)*selected semesters*

Interdisciplinary approach to medieval literature, emphasizing cultural and historical context. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.

ENG 416 Chaucer in Middle English. (3)*once a year*

Yearly alternate between Chaucer's *The Canterbury Tales* and *Troilus and Criseyde*. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.

ENG 418 Renaissance Literature. (3)*once a year*

Selected topics, authors, contexts, and themes in Renaissance literature. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.

ENG 419 English Literature in the Early 17th Century. (3)*once a year*

Topics, authors, and themes in English literature, 1603–1660. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.

ENG 423 Renaissance Drama. (3)*spring*

Topics, authors, and themes in the drama of the Tudor and early Stuart periods. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.

ENG 424 Milton. (3)*once a year*

Selected prose and poetry, emphasizing *Paradise Lost*, *Paradise Regained*, and *Samson Agonistes*. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.

ENG 425 Studies in Romanticism. (3)*fall*

Romanticism in continental, British, and American literature and culture. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or 241 or instructor approval.

ENG 427 Studies in 18th-Century Literature and Culture. (3)*selected semesters*

Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or 222 or instructor approval.

ENG 429 Studies in European Literature and Culture. (3)*selected semesters*

Literary, cultural, and historical issues. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Topics may include the following:

- Feminist Political Writing in Contemporary Europe. (3)
Examines the discourse of gender-politics in Central Eastern Europe before and after Soviet hegemony. Cross-listed as FLA 461. Credit is allowed for only ENG 429 or FLA 461.
- Literature and Film in 20th-Century Eastern Europe. (3)
Evaluates literary texts and films as a massive propaganda machine of the totalitarian state. Cross-listed as FLA 476. Credit is allowed for only ENG 429 or FLA 476.
- Literature and Politics in Pre- and Post-Communist Europe. (3)
Interdisciplinary examination of the cultures of Eastern Europe from WWI to the present. Cross-listed as FLA 472. Credit is allowed for only ENG 429 or FLA 472.
- Politics of Drama in 20th-Century Europe. (3)
Interdisciplinary examination of European drama before and after WWII. Cross-listed as FLA 464. Credit is allowed for only ENG 429 or FLA 464.

ENG 430 Studies in Victorian Literature and Culture. (3)*once a year*

Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or instructor approval.

ENG 434 Studies in the Literature and Culture of the Americas. (3)*selected semesters*

Literature and culture of North America, South America, and the Caribbean. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or 242 or instructor approval.

ENG 436 Studies in Anglophone Literature and Culture. (3)*selected semesters*

Literary, social, and cultural issues of English-speaking former colonial territories. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or 242 or instructor approval.

ENG 440 Studies in American Literature and Culture. (3)*once a year*

Various genres in their literary, political, theoretical, and historical contexts. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or 242 or instructor approval.

ENG 442 Studies in 20th-Century British and Irish Literature and Culture. (3)*once a year*

Major literary genres (novel, poetry, and drama) in their cultural and historical contexts. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or instructor approval.

ENG 444 Studies in American Romanticism. (3)*once a year*

Fiction, poetry, and essays of such 19th-century authors as Hawthorne, Emerson, Melville, Thoreau, Fuller, Whitman, and Dickinson. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or instructor approval.

ENG 445 Studies in American Realism. (3)*once a year*

Writers and influences that shaped the development of literary realism. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 242 or instructor approval.

ENG 446 Studies in Modernism. (3)*selected semesters*

Cultural, historical, and literary problems in American and European modernism. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or 242 or instructor approval.

ENG 447 Studies in Postmodernism. (3)*selected semesters*

Literary, social, and cultural issues. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or 242 or instructor approval.

ENG 448 Studies in Irish Literature and Culture. (3)*selected semesters*

Themes and problems pertaining to Irish literature, film, and social and cultural history. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or instructor approval.

GRADUATE PROGRAMS AND COURSES

ENG 452 Studies in the Novel. (3)

selected semesters

May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or 222 or 241 or 242 or instructor approval.

ENG 453 Studies in the American Novel. (3)

fall and spring

Poetics and politics of the novel, 18th through 21st centuries. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or 242 or instructor approval.

ENG 455 Forms of Verse: Theory and Practice. (3)

selected semesters

Types, history, analysis of traditional poetic forms and contemporary adaptations. Writing of poetry in forms such as sonnet, villanelle, sestina. See ENG Notes 1, 2. Prerequisite: ENG 310 or instructor approval.

ENG 457 Studies in American Poetry. (3)

selected semesters

May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or 242 or instructor approval.

ENG 459 Studies in African American/Caribbean Literatures. (3)

selected semesters

Studies in African American or Caribbean literatures according to genre, period, theory, or selected authors. May be repeated for credit when topics vary. Cross-listed as AFH 459. Credit is allowed for only AFH 459 or ENG 459. See ENG Notes 1, 2, 3. Topics may include the following:

- African American Short Story

ENG 461 Studies in Women and Literature. (3)

selected semesters

Advanced topics in literature by or about women. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3.

ENG 464 Studies in Drama. (3)

selected semesters

Selected topics in the history and theory of the genre. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or 222 or 241 or 242 or instructor approval.

ENG 465 Studies in Film. (3–4)

selected semesters

Advanced topics in cinema. May be repeated for credit when topics vary. Lecture, viewing, discussion. See ENG Notes 1, 2.

ENG 469 Science and Literature. (3)

selected semesters

Historical and theoretical links between science and literature, from Francis Bacon to the present, examined in cultural context. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3.

ENG 470 Symbols and Archetypes in Children's Literature. (3)

fall

Various critical approaches and recurring themes studied in relation to classical and contemporary children's literature. Lecture, discussion, reading. See ENG Notes 1, 2, 3.

ENG 471 Literature for Adolescents. (3)

fall and spring

Prose and poetry that meet the interests and capabilities of junior high and high school students. Stresses recent literature. Requires passing grade of at least "C" (2.00) before students are permitted to student teach in English. See ENG Notes 1, 2, 3.

ENG 480 Methods of Teaching English: Composition. (3)

fall or spring and summer

Methods of instruction, organization, and presentation of appropriate content in the teaching of composition and other writing skills. See ENG Notes 1, 2.

ENG 482 Methods of Teaching English: Language. (3)

fall or spring and summer

Methods of instruction, organization, and presentation of appropriate content in language and usage for junior and senior high schools. Lecture, discussion, lab. See ENG Notes 1, 2.

ENG 500 Research Methods. (3)

once a year

Studies the methods and practices of the disciplines within the Department of English. Offered in discipline-specific formats. Lecture, discussion.

ENG 502 Contemporary Critical Theories. (3)

once a year

Studies the principles and techniques of contemporary theory and criticism.

ENG 503 Comparative Literature, Theory, and Practice. (3)

selected semesters

Problems, methods, and principles of comparative analysis, illustrated by selected critical essays and literary/cultural texts. Lecture, discussion.

ENG 504 Cross-Cultural Studies. (3)

selected semesters

Theoretical and analytical issues for comparative research across distinct cultural regions and traditions. May be repeated for credit when topics vary.

ENG 505 Writing Workshops. (3)

selected semesters

Intense poetry and fiction workshops for experienced writers, emphasizing individual style. May be repeated for credit when topics vary. Studio.

ENG 506 Methods and Issues in Teaching Language. (3)

selected semesters

Methods, issues, and practices in teaching appropriate content in language usage for junior and senior high schools.

ENG 507 Methods and Issues in Teaching Composition. (3)

fall and spring

Up-to-date theory, practice, and implementation of secondary writing instruction. Prerequisites: teaching experience; instructor approval.

ENG 517 History of the English Language. (3)

selected semesters

Surveys the development of the English language, with an emphasis on major linguistic transformations. Cross-listed as LIN 517. Credit is allowed for only ENG 517 or LIN 517.

ENG 530 Old English. (3)

selected semesters

Study of Old English grammar, syntax, and phonology, with selected readings.

ENG 531 Old English Literature. (3)

selected semesters

Intensive literary, linguistic, and cultural study of Old English literature. May be repeated for credit when topics vary. Prerequisite: ENG 530.

ENG 532 Middle English Dialects. (3)

selected semesters

Study of the principal dialects of Middle English, with selected readings. Prerequisite: graduate standing.

ENG 533 Studies in Medieval Literature. (3)

selected semesters

Selected topics in English literature from the 11th through the 15th centuries. May be repeated for credit when topics vary. Prerequisite: graduate standing.

ENG 534 Studies in Renaissance Literature. (3)

selected semesters

Selected topics and literary works studied in the contexts of English Renaissance culture. May be repeated for credit when topics vary.

ENG 535 Studies in 18th- and 19th-Century British Literature. (3)

selected semesters

Selected topics, issues, figures, and genres in British literature and culture of the 18th and 19th centuries. May be repeated for credit when topics vary.

ENG 536 Studies in American Literature Before 1900. (3)

selected semesters

Selected topics, issues, figures, and genres in 17th-, 18th-, and 19th-century American literature, including the literature of conquest and contact. May be repeated for credit when topics vary.

ENG 537 Studies in Modern and Contemporary British Literature. (3)

selected semesters

Selected topics, issues, figures, and genres in British literature and culture after 1900. May be repeated for credit when topics vary.

ENG 538 Studies in Modern and Contemporary American Literature. (3)*selected semesters*

Selected topics, issues, figures, and genres in American literature and culture after 1900. May be repeated for credit when topics vary.

ENG 539 Studies in Modernist and Postmodernist Literature and Theory. (3)*selected semesters*

Selected topics in Modernist and Postmodernist studies. May include literary and theoretical texts. May be repeated for credit when topics vary.

ENG 540 Issues in Teaching Literature to Adolescents. (3)*selected semesters*

Issues and new approaches in teaching contemporary literature in high school.

ENG 542 Studies in North American Ethnic Literatures. (3)*selected semesters*

Selected works studied in their cultural contexts from authors representing ethnic experiences in the United States. May be repeated for credit when topics vary.

ENG 543 Studies in Anglophone Literatures. (3)*selected semesters*

Selected topics, texts, periods, literary trends in works by world authors writing in English. May be repeated for credit when topics vary.

ENG 544 Studies in Colonial and Postcolonial Literature. (3)*selected semesters*

Selected topics, periods, theories, and figures in works by authors representing colonial and postcolonial regions and/or experiences. May be repeated for credit when topics vary.

ENG 545 Studies in Women's Literatures. (3)*selected semesters*

Selected topics, texts, periods, and figures in works written by and/or about women, studied in their cultural contexts. May be repeated for credit when topics vary.

ENG 546 Gender Studies. (3)*selected semesters*

Selected topics, periods, and themes in the study of gender and sexuality, including attention to theoretical issues. May be repeated for credit when topics vary.

ENG 550 Translation. (3)*selected semesters*

Surveys theories and practices of translation into English. Considers target, audience and market. May be repeated for credit when topics vary. Lecture, studio.

ENG 551 Rhetorical Traditions. (3)*fall*

Examines rhetorical traditions spanning ancient to contemporary rhetorics. May be repeated for credit when topics vary. Lecture, discussion.

ENG 552 Composition Studies. (3)*selected semesters*

Selected topics in the history and theories of composition. May be repeated for credit when topics vary. Lecture, discussion.

ENG 553 Technologies of Writing. (3)*selected semesters*

Critical study and cultural analysis of information technologies and their effects on various writing practices. May be repeated for credit when topics vary.

ENG 554 Rhetorics of Race, Class, and Gender. (3)*selected semesters*

Study of interdependent relationships of race, class, and gender in rhetorical constructions of self and community. May be repeated for credit when topics vary. Lecture, discussion.

ENG 556 Theories of Literacy. (3)*once a year*

Examines various theories of literacy, their embedded values and assumptions, and their influences on academic scholarship and pedagogy. May be repeated for credit when topics vary. Lecture, discussion.

ENG 560 Genre Studies. (3)*selected semesters*

Critical analysis and study of works from a single genre or comparative analysis and study of multiple genres. May be repeated for credit when topics vary.

ENG 561 Film Studies. (3)*selected semesters*

Analysis and study of film genres, cinematic techniques, and problems of interpretation and representation. May be repeated for credit when topics vary.

ENG 562 Forms of Poetry. (3)*selected semesters*

Types, history, criticism, and schools of theory of metrical form. Analyzes lyric, narrative, and dramatic poetry. May be repeated for credit when topics vary.

ENG 563 Forms of Fiction. (3)*selected semesters*

Types, history, criticism, and schools of theory in the forms of fiction. Analyzes narrative and dramatic structure. May be repeated for credit when topics vary.

ENG 580 Practicum. (1–12)*selected semesters***ENG 591 Seminar. (3)***fall and spring*

Selected topics regularly offered in various areas of English studies.

ENG 594 Conference and Workshop. (1–12)*selected semesters***ENG 598 Special Topics. (1–4)***selected semesters***ENG 599 Thesis. (1–12)***selected semesters***ENG 602 Advanced Studies in Theory and/or Criticism. (3)***selected semesters*

Seminar courses on the principles, strategies, and applications of critical, cultural, and/or literary theory and/or criticism. May be repeated for credit when topics vary.

ENG 603 Advanced Studies in Comparative Literature. (3)*selected semesters*

Seminar courses on the problems, methods, and principles of comparative analysis. May be repeated for credit when topics vary.

ENG 604 Interdisciplinary Cultural Studies. (3)*selected semesters*

Seminar courses on work from literature, anthropology, and/or other disciplines, with an emphasis on cultural influences and functions. May be repeated for credit when topics vary.

ENG 606 Advanced Studies in English Education. (3)*once a year*

Current research, issues, and trends in English education. May be repeated for credit when topics vary.

ENG 632 Advanced Studies in Medieval and Renaissance Literature and Culture. (3)*selected semesters*

Seminar in works of the Medieval or Renaissance periods, studied in their cultural contexts. May be repeated for credit when topics vary.

ENG 635 Advanced Studies in British Literature. (3)*selected semesters*

Seminar courses on works produced in or about England, Scotland, and Wales, studied in their cultural contexts. May be repeated for credit when topics vary.

ENG 636 Advanced Studies in American Literature. (3)*selected semesters*

Seminar courses on works produced in or about the United States, studied in their cultural contexts. May be repeated for credit when topics vary.

ENG 639 Advanced Studies in Modernism and Postmodernism. (3)*selected semesters*

Seminar courses on topics in Modernist and Postmodernist studies. May include literary and theoretical texts. May be repeated for credit when topics vary.

GRADUATE PROGRAMS AND COURSES



Lattie F. Coor Hall, which opened in January 2004, is named in honor of the university's 15th president.

Tim Trumble photo

ENG 642 Advanced Studies in Ethnic, Anglophone, or Post-Colonial Literatures. (3)

selected semesters

Seminar courses that consider the influence of cultural or geopolitical developments on the production and circulation of texts. May be repeated for credit when topics vary.

ENG 645 Advanced Studies in Gender Issues. (3)

selected semesters

Seminar courses that consider the influence of gender on the production and circulation of texts. May be repeated for credit when topics vary.

ENG 651 Advanced Studies in History and Theories of Rhetoric. (3)

selected semesters

Selected topics in the history and/or theory of rhetoric. May be repeated for credit when topics vary.

ENG 652 Advanced Composition Studies. (3)

selected semesters

Selected topics on particular composition theories, practices, pedagogies, and figures. May be repeated for credit when topics vary.

ENG 654 Advanced Studies in Rhetoric, Writing, Technology, and Culture. (3)

selected semesters

Advanced study of theoretical, methodological, and pedagogical issues concerning the interrelationships among rhetoric, culture, writing, and writing technologies. May be repeated for credit when topics vary. Seminar.

ENG 655 Disciplinary Discourses. (3)

selected semesters

Investigation of professional and disciplinary issues related to English studies. May be repeated for credit when topics vary. Cross-listed as LIN 655. Credit is allowed for only ENG 655 or LIN 655.

ENG 656 Studies in Cross-Cultural Discourse. (3)

selected semesters

Theoretical and methodological issues in the comparative study of discourses between cultures and communities of practice. May be repeated for credit when topics vary. Seminar. Cross-listed as LIN 656. Credit is allowed for only ENG 656 or LIN 656.

ENG 661 Advanced Studies in Film. (3)

selected semesters

Seminar courses on topics, genres, and figures in film studies, including technical and theoretical issues. May be repeated for credit when topics vary.

ENG 662 Poetic Genres. (3)

selected semesters

Creative writing courses in the long poem, the erotic image, death and transfiguration, reading and influence, and others. May be repeated for credit when topics vary.

ENG 663 Fiction Genres. (3)

selected semesters

Creative writing courses in time and fiction, gothic fiction, myth in fiction, science fiction, and others. May be repeated for credit when topics vary.

ENG 664 Mixed Genres. (3)

selected semesters

Creative writing courses in the prose poem, magical realism, the literature of obsession. May be repeated for credit when topics vary.

ENG 665 Creative Methods. (3)

selected semesters

Creative writing courses in theory of the novel, poetics, story into film, and others. May be repeated for credit when topics vary.

ENG 667 Issues in the Writing Professions. (3)

selected semesters

Focuses on career preparation, resources, the role of writing in the community, creative writing, and the Internet. May be repeated for credit when topics vary.

ENG 680 Practicum. (1–12)

fall, spring, summer

Topics may include the following:

- First Book Seminar/Applied Project. (3–6)

ENG 792 Research. (1–15)

selected semesters

ENG 799 Dissertation. (1–15)

selected semesters

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

LINGUISTICS (LIN)

LIN 500 Research Methods. (3)

fall

Studies the methods and practices of the disciplines within the Department of English. Offered in discipline-specific formats. Lecture, discussion.

LIN 510 Linguistics. (3)

fall

Overview of linguistics, its subfields, and some of its applications.

LIN 511 Phonetics and Phonology. (3)

spring

Current trends in phonological theory and its basis in acoustic and articulatory phonetics. Prerequisite: LIN 510.

LIN 513 Semantics. (3)

fall in even years

Current approaches to linguistic meaning with particular attention to English. Prerequisite: LIN 510 (or its equivalent) or instructor approval.

LIN 514 Syntax. (3)

spring

Analyzes syntactic structures using a generative theoretical model with a focus on English. Prerequisite: LIN 510 or instructor approval.

LIN 515 American English. (3)

spring

Development of the English language in America, including regional and social varieties, and its relationship to other immigrant and native languages.

LIN 516 Pragmatics and Discourse Analysis. (3)

fall

Studies language use in context and language structures in spoken and written texts. Prerequisite: LIN 510 (or its equivalent) or instructor approval.

LIN 517 History of the English Language. (3)

selected semesters

Surveys the development of the English language, with an emphasis on major linguistic transformations. Cross-listed as ENG 517. Credit is allowed for only ENG 517 or LIN 517.

LIN 520 Second Language Acquisition Theories. (3)

fall

Theories of second language acquisition, including the linguistic, cognitive, and sociocultural aspects.

LIN 521 Methods of Teaching English as a Second Language. (3)

spring

Methods of teaching English as a second language, language teaching trends, practical applications, and the teaching of different skills. Prerequisite: LIN 520 or instructor approval.

LIN 522 Grammar for TESL. (3)

selected semesters

Survey of major grammatical structures in English and how they can be taught to ESL speakers. Prerequisite: LIN 510.

LIN 523 Language Testing and Assessment. (3)

selected semesters

Introduction to the theory and practice of language test construction. Prerequisite: LIN 520 or instructor approval.

LIN 524 Curriculum Design and Materials Development. (3)

once a year

Practical guide to curriculum and materials development. Lecture, studio. Prerequisite: LIN 520 or instructor approval.

LIN 591 Seminar. (3)

fall and spring

Selected topics.

LIN 593 Applied Project. (3)

fall and spring

Preparation of a supervised applied project that is a graduation requirement in the TESL professional major. Independent study with consultation.

LIN 599 Thesis. (1–12)

selected semesters

LIN 610 Advanced Studies in Linguistics. (3)

selected semesters

Different topics such as morphology, semantics, typology, history of linguistics. May be repeated for credit when topics vary.

LIN 614 Advanced Studies in Syntax. (3)

selected semesters

Focuses on morphosyntactic feature checking, movement, phrase structure, and their crosslinguistic differences. May be repeated for credit when topics vary.

LIN 615 Advanced Studies in Sociolinguistics. (3)

selected semesters

Language in its social setting, e.g., social variation among native speakers, sociolinguistics aspects of second language acquisition, and language policy. May be repeated for credit when topics vary.

LIN 616 Advanced Studies in Discourse Analysis. (3)

selected semesters

Advanced analysis of spoken and written discourse emphasizing different methodological and theoretical issues. May be repeated for credit when topics vary.

LIN 617 Advanced Studies in Historical Linguistics. (3)

selected semesters

Overview of theories on language change, the history of languages, and of methods in historical linguistics. May be repeated for credit when topics vary.

LIN 620 Advanced Studies in Second Language Acquisition. (3)

selected semesters

Selected topics in second language acquisition, such as phonetics and phonology, morphology, syntax, and discourse. May be repeated for credit when topics vary.

LIN 655 Disciplinary Discourses. (3)

selected semesters

Investigation of professional and disciplinary issues related to English studies. May be repeated for credit when topics vary. Cross-listed as ENG 655. Credit is allowed for only ENG 655 or LIN 655.

LIN 656 Studies in Cross-Cultural Discourse. (3)

selected semesters

Theoretical and methodological issues in the comparative study of discourses between cultures and communities of practice. May be repeated for credit when topics vary. Seminar. Cross-listed as ENG 656. Credit is allowed for only ENG 656 or LIN 656.

LIN 792 Research. (1–15)

selected semesters

LIN 799 Dissertation. (1–15)

selected semesters

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Environmental Design and Planning

Interdisciplinary Doctoral Program

www.asu.edu/caed/PHD.html

480/965-4620

ARCH 126

K. David Pijawka, Director, Executive Committee

Applied Biological Sciences (ASU East)

Professors: Brady, Brock, Mushkatel

Associate Professors: Green, Miller, Whysong

Architecture

Professors: Bryan, Ozel

Associate Professors: Ellin, Zygas

Assistant Professors: Hejduk, Kobayashi, Lerum

Design

Professors: Brandt, Giard

Assistant Professors: Bender, McCoy, Thibeau Catsis

Planning and Landscape Architecture

Professors: Kihl, Lai, Pijawka

Associate Professors: Cameron, Cook, Guhathakurta, Kim, Yabes

Assistant Professor: Crewe

The Executive Committee on Environmental Design and Planning offers a collegewide interdisciplinary program leading to the Ph.D. degree in Environmental Design and Planning. Three areas of concentration are available: design; history, theory, and criticism; and planning. The faculty of the Schools of Architecture, Design, and Planning and Landscape Architecture participate in offering the degree. Faculty from disciplines outside of the College of Architecture and Environmental Design may participate in offering the program if appropriate to the interdisciplinary nature of the student's research interest.

GRADUATE PROGRAMS AND COURSES

For more information, access the program Web site at www.asu.edu/caed/PHD.html, or send e-mail to caed.phd@asu.edu.

DOCTOR OF PHILOSOPHY

The Ph.D. degree in Environmental Design and Planning is an individualized collegewide interdisciplinary degree that integrates graduate courses and faculty research expertise from a variety of academic areas: architecture, building design, environmental planning, environmental resources, graphic design, industrial design, and interior design. The program is at the cutting edge of creating new knowledge in environmental design and planning. It complements interdisciplinary research in other disciplines within the university. Broad in scope, the program involves multidisciplinary research interests at both micro- and macroscale levels of design and planning. The program provides research experience for students wishing to pursue careers in academe and in industry as members of interdisciplinary design and planning teams on environmental and energy issues, as well as for those wishing to teach in the architecture, design, or planning fields.

Areas of Concentration

The Ph.D. degree in Environmental Design and Planning offers concentrations in the following areas based on the research and teaching expertise of participating faculty.

Design. Design—microscale issues in the designed environment—includes the study of architecture, building science, graphic design, industrial design, interior design, and landscape architecture. Research fields include acoustics, affordable housing, climate-responsive building, computer-aided design, energy modeling, exhibit design, facilities planning and management, fire protection, human factors in design, industrialized housing, landscape architecture, lighting, passive solar energy and conservation, and site planning and wayfinding.

History, Theory, and Criticism. History, theory, and criticism—cultural and theoretical issues in the history of the environment—includes the study of architecture, environmental planning, industrial design, interior design, landscape architecture, and urbanism. Research fields include study of the arts and crafts movement, contemporary criticism and analysis, design theories and methods, history of architecture and design, history of building science, history of city planning, and landscape theory and criticism.

Planning. Planning—macroscale issues in the planned environment—includes the study of environmental resource management, landscape architecture, planning, and urban design. Research fields include contemporary urban design, economic development, environmental assessment, environmental planning, ethics in planning, housing and urban development, international development planning, landscape ecology, legal aspects of planning, planning for ethnically diverse populations, the protection of environmentally sensitive areas, public participation, social dimensions of planning, urban design policy, urban planning, and urban and regional development.

Admission Requirements. Students are admitted to the Ph.D. program only upon completion of a master's degree in architecture, environmental resources, design, landscape architecture, or planning or upon the demonstration of equivalent standing.

In addition to meeting Graduate College admission requirements, applicants must submit the following to:

PH.D. PROGRAM IN ENVIRONMENTAL DESIGN
AND PLANNING
COLLEGE OF ARCHITECTURE AND
ENVIRONMENTAL DESIGN
ARIZONA STATE UNIVERSITY
PO BOX 871905
TEMPE AZ 85287-1905

1. a minimum of three letters of reference;
2. a sample of written work and any other evidence relevant to admission to the program;
3. a statement of purpose (summarizing career objectives, the reasons for pursuing a doctoral education, an indication of the proposed area of concentration, and a potential mentor in the College of Architecture and Environmental Design); and
4. Graduate Record Examination (GRE) scores.

A Test of English as a Foreign Language score of at least 600 is required of all applicants whose native language is not English. International applicants who are interested in receiving funding as Teaching Associates (TAs), must also submit a Test of Spoken English (TSE) score of at least 50.

Submitted materials are returned after final admission procedures, provided sufficient prepaid postage is enclosed, or if the materials are claimed in person within one year of submission. Unclaimed materials are retained for only one year. The Ph.D. program assumes no liability for lost or damaged materials.

Application Deadlines. All application materials should be received on or before December 31 for fall semester admissions. Applications for associateships and scholarships normally are considered at the same time.

Selection Procedures. The Ph.D. Executive Committee evaluates the applications and supporting materials and recommends to the Graduate College whether the applicant should be granted admission or if admission should be denied. Admission decisions are based on the compatibility of the applicant's career goals with the purpose of the degree program and research interests of faculty, previous academic training and performance, GRE scores, reference letters, and the ability of the potential mentor to devote time to the student.

Program of Study. The degree is structured as a 54-semester-hour post-master's program, not as an 84-semester-hour postbaccalaureate program. Students must be thoroughly familiar with design and planning and are expected to demonstrate a high level of academic maturity before being admitted to the program.

Of the 54 semester hours, 24 must be research and dissertation credit. At least 30 semester hours of the remainder, exclusive of dissertation and research hours, must be

completed after admission to the Ph.D. program at ASU. No transfer credits are allowed to fulfill the 54-semester-hour minimum requirement for the program.

The student is required to take 15 semester hours in the area of concentration and a minimum of nine semester hours of specialized course work outside the area of concentration; a minimum of six semester hours in current research and research methods is required.

Each student entering the Ph.D. program is required to submit a program of study during the first year. The director of the Ph.D. program appoints a committee made up of a minimum of three faculty members from the areas of concentration. This committee includes a prospective mentor and is responsible for approving the student's program of study and monitoring the student's progress in the program.

Preliminary Candidate Evaluation. Before the end of the first academic semester of course work, the student's mentor and the program director conduct a preliminary evaluation of the student. The evaluation is based on the student's program check sheet, a progress evaluation by the mentor, and an informal meeting with the program director. It is directed at the student's selected area of concentration at the time of their admission to the program.

Performance on the preliminary candidate evaluation serves as a guide to the student's program committee as the committee members counsel the student and formulate a program of study.

Academic Standard and Evaluation. Each student in the program receives an annual evaluation. Students submit, to their mentor and the program director, a two-page summation of the academic year. The summation must include proposed research, including progress toward dissertation; a list of goals accomplished during the past academic year; and projected goals for the upcoming academic year. In addition, students present their summation to the CAED core faculty.

Students must meet the minimum Graduate College requirements, but program standards may exceed these requirements. For example, students are expected to

1. have all grades in graduate courses 3.00 GPA or higher,
2. have made sufficient progress in their research projects,
3. have attended or presented papers at seminars/meetings,
4. have accomplished their goals from the previous year, and
5. set realistic goals for the upcoming academic year.

Foreign Language Requirements. None.

Comprehensive Examinations. Upon completion of course work in the Ph.D. program of study and before admission to candidacy and the start of dissertation research, the student must take a written examination on his or her knowledge of the chosen area of concentration and interdisciplinary knowledge, including the ability to communicate across disciplines. The student's program commit-

tee conducts an oral examination following the review of the written examination.

Dissertation Requirements. The dissertation must consist of a fully documented written analysis of a problem that is original in nature and extends the knowledge and/or theoretical framework of the field. The research must demonstrate the student's creativity and competence in independent research.

Final Examination. A final oral examination in defense of the dissertation is required. A candidate must pass the final examination within five years after completing the comprehensive examination.

Research Activity. Research topics within the Ph.D. program in Environmental Design and Planning may change during the course of research, either by expanding or narrowing the focus of the topic. For more information about student and faculty research, access the Web site at www.asu.edu/caed/PHD.

Environmental Design and Planning

In addition to the EPD 700-level courses, refer to the course listing under the following majors for courses that are available to support the collegewide interdisciplinary degree program in Environmental Design and Planning: architecture, building design, environmental planning, environmental resources, industrial design, interior design, and landscape architecture.

ENVIRONMENTAL DESIGN AND PLANNING (EPD)

EPD 598 Special Topics. (1–4)

selected semesters

Topics may include the following:

- Arts and Crafts Movement in Design
- Computational Models in Environmental Design
- Ecological Assessment and Evaluation
- Elderly Housing Issues in the U.S. Southwest
- Ethics in Environmental Design and Planning
- Human Comfort
- Integral Urbanism
- Issues in Environment and Behavior Studies
- Issues in Industrial Design
- Issues in Sustainable Design
- New Evaluation Methods for the Built Environment
- Philosophy of Environmental Design Research

EPD 700 Interdisciplinary Research Methods. (3)

spring

Introduces the philosophy and methodology of interdisciplinary research in environmental design and planning. Seminar. Fee.

EPD 710 Current Research in Design. (3)

fall

Review and critical evaluation of contemporary literature and method in architecture, building science, interior design, industrial design, and landscape architecture. Seminar. Fee.

EPD 712 Current Research in Planning. (3)

fall

Review and critical evaluation of contemporary literature and method in environmental planning, landscape ecology, urban design, and urban and regional planning. Seminar. Fee.

EPD 714 Current Research in History, Theory, and Criticism. (3)

fall

Review and critical evaluation of contemporary literature and method in the theory and history of architecture, design, and planning. Seminar. Fee.

EPD 792 Research. (1–12)

selected semesters

GRADUATE PROGRAMS AND COURSES

EPD 799 Dissertation. (1–12)
selected semesters

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 50.

Environmental Planning

Master's Program

www.asu.edu/caed

480/965-7167

AED 158

Hemalata Dandekar, Director, School of Planning and Landscape Architecture

Professors: Dandekar, Kihl, Lai, Mushkatel, Pijawka

Associate Professors: Cameron, Cook, Fish Ewan, Guhathakurta, Kim, Yabes

Assistant Professors: Crewe, Ewan

The mission of the School of Planning and Landscape Architecture is to advance knowledge and skills for the planning and design of healthy, aesthetically rewarding, equitable, and sustainable communities. The school offers opportunities for the integration of urban planning and landscape architecture. The School of Planning and Landscape Architecture offers a 47-semester-hour, accredited, professional, Master of Environmental Planning (M.E.P.) degree. The school also participates in an interdisciplinary college-wide program leading to the Ph.D. degree in Environmental Design and Planning.

MASTER OF ENVIRONMENTAL PLANNING

The Master of Environmental Planning (M.E.P.) is an interdisciplinary, professional degree designed to prepare students for leadership roles in planning within both the public and private sectors and from local to international organizations. The M.E.P. degree is accredited by the Planning Accreditation Board. The curriculum includes a common core of required courses that provides linkage between knowledge and practice, and fundamental theories and skills. The two specializations offered are *community and urban development* and *environmental planning*. The community and urban development specialization provides students with knowledge and skills in areas such as housing, economic and community development, public policy analysis, transportation, land use planning, urban design, and historic preservation. The environmental planning specialization provides students with knowledge and skills in such areas as sustainable design, environmental resources, growth management, environmental policy analysis, open space design, and conservation. Specializations provide connections between the School of Planning and Landscape Architecture and the other disciplines in the College of

Architecture and Environmental Design and the university. Students have a unique opportunity to integrate urban and environmental aspects of planning in rapidly developing metropolitan areas in the demographic and climatic context of the southwest region of the United States.

Students must take one of the three following options to obtain an integrative experience in research and planning: capstone studio, professional project, or thesis. Practical experience in planning may also be obtained through an optional internship program. In addition to the core faculty, the program is enriched by the participation of faculty from other ASU academic units as well as leading planning and landscape architecture practitioners from the Phoenix area.

Admission Requirements and Procedures. To be considered for the program, the applicant must fulfill all admission requirements of the Graduate College, in addition to meeting admission requirements of the School of Planning and Landscape Architecture. The following materials are required by the School of Planning and Landscape Architecture and should be submitted to

GRADUATE COLLEGE
ARIZONA STATE UNIVERSITY
WILSON HALL, ROOM 101
PO BOX 871003
TEMPE AZ 85287-1003

1. a statement of intent (maximum 600 words) explaining (a) the applicant's interest in planning; (b) the applicant's academic background, and if appropriate, preparation for the selected area of specialty: community and urban development, or environmental planning (these may include written samples or a portfolio, but are not required); and (c) the applicant's educational objectives;
2. test scores: TOEFL scores from international students whose native language is not English;
3. three letters of recommendation from references who are qualified to comment on the applicant's potential in the selected area of study; and
4. a résumé.

International students who wish to be considered for a teaching assistantship and whose first language is not English are required to pass the TSE administered by the American English and Culture Center at ASU.

Application Deadlines. Since most financial aid packages are granted for the fall semester, applicants are strongly encouraged to submit their materials on or before March 15 to the Graduate College. For spring enrollment, application materials are due on October 15. However, applicants who submit their materials after the semester deadline are considered on a rolling basis according to space availability.

Selection Procedures and Notifications. School faculty evaluate the applications and supporting materials and recommend to the Graduate College whether the applicant should be granted regular or provisional admission or if admission should be denied. If admission is provisional, the Graduate College specifies in its letter of admission the provisions to be met to gain regular status.

Program of Study. An approved program of study is 47 semester hours or 50 with an optional internship. The program has the typical distribution as follows:

Required core courses, including either the capstone studio, thesis, or professional project.....	23
Specialization courses.....	24
Optional internship.....	3
Total	50
Total without internship	47

Students must take required core courses and select an area of specialization. Students must also select a capstone studio, professional project, or a thesis option. All students are expected to have taken at least one course in statistics. Inquiries about the M.E.P. program should be directed to the School of Planning and Landscape Architecture.

Foreign Language Requirements. None.

Thesis Requirements. A capstone studio, thesis, or professional project is required.

Final Examination. A comprehensive oral examination administered by the supervisory committee and based on the student’s thesis or professional project is required of all students electing the thesis or professional project option.

RESEARCH ACTIVITY

Scholarly activities of the School of Planning and Landscape Architecture include community development, environmental planning, housing and urban policy, international research, historical research and preservation, transportation, landscape ecology and design, planning theory and education, and urban-environmental modeling.

For more information about the School of Planning and Landscape Architecture research activities, access the school’s Web site at www.asu.edu/caed/SPLA.

LANDSCAPE ARCHITECTURE (PLA)

PLA 411 Landscape Architecture Theory and Criticism. (3)

spring
Critically analyzes landscape architecture theories and projects to evaluate validity of design and contribution to society. Prerequisites: PLA 310, 361, 362, 420, 461.

PLA 461 Landscape Architecture V. (4)

fall
Landscape ecological planning: collection and application of ecological data relevant to planning and design at landscape scale. Studio. Fee. Prerequisite: PLA 362.

PLA 485 International Field Studies in Planning and Landscape Architecture. (1–12)

fall, spring, summer
Organized field study of planning and landscape architecture in specified international locations. May be repeated for credit with school approval. Study abroad. Cross-listed as PUP 485. Credit is allowed for only PLA 485 or PUP 485.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 50.

URBAN AND ENVIRONMENTAL PLANNING (PUP)

PUP 412 History of the City. (3)

fall
The city from its ancient origins to the present day. Emphasizes European and American cities during the last five centuries. Cross-listed as APH 414. Credit is allowed for only APH 414 or PUP 412.

PUP 420 Theory of Urban Design. (3)

spring
Analyzes the visual and cultural aspects of urban design. Theories and techniques applied to selected study models. Prerequisite: junior standing.

PUP 433 Zoning Ordinances, Subdivision Regulations, and Building Codes. (3)

fall and spring
Analyzes zoning ordinances, subdivision regulations, building codes, and other planning implementation techniques relative to local development. Prerequisite: admission to upper division or instructor approval.

PUP 434 Urban Land Economics. (3)

spring
Interaction between space and economic behavior. Examines the use and value of land through economic theories. Prerequisite: admission to upper division or instructor approval.

PUP 436 City Structure and Planning. (3)

spring
Political structure and organization of government as it relates to planning. Prerequisite: PUP 301.

PUP 442 Environmental Planning. (3)

fall
Environmental planning problems, including floodplains, water quality and quantity, solid and hazardous waste, air quality, landslides, and noise. Field trips. Prerequisite: PUP 301 or instructor approval.

PUP 444 Preservation Planning. (3)

spring
History, theory, and principles of historic preservation. Emphasizes legal framework and methods practiced. Lecture, off-campus field study. Prerequisite: instructor approval.

PUP 445 Women and Environments. (3)

fall
Examines the role women play in shaping the built environment; ways built/natural forms affect women’s lives. Focuses on contemporary U.S. examples. Prerequisite: admission to upper division or graduate standing.

PUP 452 Ethics and Theory in Planning. (3)

fall
Ethics and theory of professional planning practice in urban and regional communities. Prerequisite: admission to upper division or instructor approval.

PUP 485 International Field Studies in Planning and Landscape Architecture. (1–12)

fall, spring, summer
Organized field study of planning and landscape architecture in specified international locations. May be repeated for credit with school approval. Study abroad. Cross-listed as PLA 485. Credit is allowed for only PLA 485 or PUP 485.

PUP 498 Pro-Seminar. (1–7)

fall
Topics may include the following:
• Senior Pro-Seminar. (1)

PUP 501 The Idea of Planning. (3)

fall
Comprehensive review of planning profession within a political, governmental, multicultural, and gender framework.

PUP 510 Citizen Participation. (3)

spring
Theory and practice of citizen participation in planning. Examines and critiques participation techniques and roles of planners. Prerequisite: instructor approval.

PUP 520 Planning Theories and Processes. (3)

fall
Reviews past and current theoretical developments related to social change perspectives, the role and ethics of planners. Prerequisite: instructor approval.

PUP 524 Planning Methods I: Planning Research Methods. (3)

fall
Tools useful for urban planning research; emphasizes research design and survey methods. Pre- or corequisite: PUP 501 or instructor approval.

GRADUATE PROGRAMS AND COURSES

PUP 525 Urban Housing Analysis. (3)

fall

Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.

PUP 531 Planning and Development Control Law. (3)

spring

Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.

PUP 532 Advanced Urban Planning Law. (3)

spring

Advanced study on selected issues in planning law, such as urban design controls, exclusionary practices, compensable regulation, and tax policy. Prerequisite: PUP 432 or instructor approval.

PUP 542 Environmental Administration and Planning. (3)

spring

Environmental administration of policies and their relationship to environmental planning practices. Prerequisite: PUP 442.

PUP 544 Urban Land Use Planning. (3)

spring

Theory and methods of urban land use planning, including the rational planning process, comprehensive, functional, and neighborhood plans. Pre- or corequisite: PUP 501 or instructor approval.

PUP 546 Urban Design Policy. (3)

selected semesters

Advanced study of local, state, and federal urban design policy. Prerequisite: PLA 420 or PUP 420.

PUP 561 Urban Design Studio. (4)

selected semesters

Current urban form and urban landscape design problems within the Phoenix-centered region. Studio.

PUP 572 Planning Studio I: Data Inventory and Analysis. (4)

fall

Comprehensive planning workshop dealing with real community problems. Focuses on the data gathering and analysis steps of the planning process. Fee. Prerequisite: Master of Environmental Planning major or instructor approval.

PUP 574 Planning Studio II: Options and Implementation. (4)

spring

Comprehensive planning workshop dealing with real community problems. Focuses on the development of options, plan making, and plan implementation. Studio. Fee. Prerequisite: PUP 572 or instructor approval.

PUP 575 Environmental Impact Assessment. (3)

spring

Criteria and methods for compliance with environmental laws; develops skills and techniques needed to prepare environmental impact statements/assessments.

PUP 576 GIS Studio. (3)

spring

GIS as a tool to address large, multifaceted planning problems. Prerequisites: a combination of GPH 373 (or 598) and PAF 591 and PUP 322 or only instructor approval.

PUP 580 Practicum. (1–12)

fall, spring, summer

Topics may include the following:

- Capstone Studio/Workshop. (5)
Comprehensive planning workshop dealing with real community problems. Focuses on integrative real-world planning applications culminating in a professional report.

PUP 584 Internship. (3)

fall, spring, summer session 1

Internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit.

PUP 591 Seminar. (1–12)

fall and spring

Topics may include the following:

- Transportation Systems Pro-Seminar

PUP 593 Applied Project. (1–12)

fall, spring, summer

Topics may include the following:

- Professional Project. (5)
Applies advanced planning techniques and methodology to a specific, real-world planning issue, with a specified client.

PUP 598 Special Topics. (1–4)

selected semesters

Topics may include the following:

- Transportation Planning and the Environment

PUP 599 Thesis. (5)

fall, spring, summer

Creative, scholarly work developed from independent inquiry involving a substantial body of original research. Fee.

PUP 622 Planning Methods II: Quantitative Planning Analysis. (3)

spring

Methods and models used as the basic quantitative techniques of urban, regional, and environmental planning and policy analysis. Prerequisites: PUP 524; a course in statistics; instructor approval.

PUP 642 Land Economics. (3)

fall

Land use and locational impact of economic activity and the urban real property market. Prerequisite: instructor approval.

PUP 644 Public Sector Planning. (3)

spring

Urban fiscal problems and public goods provision in state and local governments. Prerequisites: a course in microeconomics; instructor approval.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 50.

Exercise and Wellness

Master's Program

www.east.asu.edu/ecollege/wellness

480/727-1945

EAW 109

William J. Stone, Chair

Professors: Burkett, Stone

Associate Professors: Phillips, Swan

Assistant Professors: Adams, Tudor-Locke

Lecturer: Woodruff

The faculty of Exercise and Wellness at ASU East offer a graduate program leading to the M.S. degree in Exercise and Wellness. Faculty also participate in an interdisciplinary Ph.D. program in Curriculum and Instruction with a concentration in exercise and wellness. For more information, see “Curriculum and Instruction,” page 179.

MASTER OF SCIENCE

All applicants for the M.S. degree program in Exercise and Wellness are required to submit scores from the Graduate Record Examination (GRE). Admission decisions are based upon previous academic training and performance, GRE scores, recommendations, and the availability and compatibility of research interests with a potential mentor. International applicants whose native language is not

English must also submit a Test of English as a Foreign Language score. Applications are reviewed by faculty only once a year. Priority is given to applications completed by January 1. The program requires a minimum of 30 semester hours, including from 12 to 15 semester hours of research course work (EXW 500, 501, 591, 599), and from 15 to 18 semester hours of EXW graduate concentration courses. Course work is selected by the student in consultation with an advisor and supervisory committee.

Deficiencies. Applicant transcripts are evaluated to assure competency in the following areas: health behavior change (health psychology), use of computers, basic nutrition, basic wellness, exercise prescription, and exercise testing. Competency in areas considered to be prerequisite to each of the listed competencies are also evaluated. Deficiencies are noted at the time of admission and may be satisfied by completing undergraduate or graduate courses or by a competency examination.

Foreign Language Requirements. None.

Thesis Requirements. A thesis is required.

Final Examination. A final oral examination in defense of the thesis is required.

RESEARCH ACTIVITY

Research in Exercise and Wellness is enhanced by the existence of research laboratories. Extensive research is also conducted in the field (work site, community, school). The research of Exercise and Wellness faculty and graduate students focuses on the fitness, health, and wellness benefits of healthy lifestyles, such as regular physical activity, sound nutrition, and effective stress management. The focus is also on disease prevention and fitness. All groups in the developmental spectrum (children to senior adults) are studied. Among the areas of current interest to faculty and graduate students are physical activity and fitness program effectiveness (strength, cardiovascular fitness, flexibility, and body composition), women's health issues, motivation to adhere to healthy lifestyles, physical activity and fitness assessment, and environmental health and wellness issues.

EXERCISE AND WELLNESS (EXW)

EXW 420 Exercise Testing. (3)

fall

Theoretical basis and practical application of pre-exercise screening, exercise testing, estimates of energy expenditure, and interpretation of results. Lecture, lab. Fee. Prerequisites: EXW 315; current CPR certification.

EXW 425 Exercise Prescription. (3)

fall

Theoretical basis for and application of general principles of exercise prescription to various ages, fitness levels, and health states. Prerequisites: EXW 320, 330. Pre- or corequisite: EXW 420.

EXW 442 Physical Activity in Health and Disease. (3)

spring

Examines the role of physical activity and fitness in the development of morbidity and mortality throughout the human life span. Prerequisite: EXW 315.

EXW 444 Epidemiology. (3)

fall

Introduces epidemiological concepts and research literature, including physical activity, nutrition, tobacco, alcohol, injury prevention, and safe sex. Prerequisites: EXW 300, 310, 320. Pre- or corequisites: EXW 325, 350.

EXW 450 Cultural and Social Issues in Exercise and Wellness. (3)

spring

Examines contemporary cultural and social issues in physical activity. Focus on theories of social behavior, racial, ethnic, and cultural differences. Prerequisite: PGS 101.

EXW 460 Resistance Training Application and Theory. (3)

fall

Fosters critical thinking as it applies to resistance training theory. Pre- or corequisite: EXW 315.

EXW 500 Research Methods. (3)

fall

Introduces the basic aspects of research, including problem selection, literature review, instrumentation, data handling, methodology, and writing the report.

EXW 501 Research Statistics. (3)

spring

Statistical procedures; sampling techniques, hypothesis testing, and experimental designs as they relate to research publications.

EXW 505 Applied Exercise and Wellness Laboratory Techniques. (3)

spring

Investigative techniques used in the applied exercise testing/prescription laboratory. Emphasizes cardiorespiratory assessment, energy balance, body composition, and electrocardiography. Integrated lecture/lab. Fee.

EXW 534 Sports and Fitness Conditioning. (3)

fall

Bases of sports and fitness conditioning, including aerobic and anaerobic power, strength, flexibility, and analysis of conditioning components for sports and fitness.

EXW 536 Physiological Aspects of Physical Activity and Chronic Disease. (3)

fall

Role of physiological mechanisms associated with acute and long-term physical activity and its influence on chronic disease and wellness.

EXW 538 Obesity, Exercise, and Health. (3)

spring

Critically examines scientific and medical evidence concerning obesity, exercise, and health across the life span.

EXW 540 Psychosocial Issues in Exercise and Wellness: Stress, Coping, and Resilience. (3)

fall

Critically explores the impact of psychological and social factors on human wellness. Lecture, seminar, group discussion.

EXW 542 Health Promotion. (3)

spring

Theory and research concerning fitness and wellness programs in nutrition, physical activity, smoking cessation, and stress management.

EXW 544 Fitness/Wellness Management. (3)

spring

Development of the fitness/wellness industry. Planning, organizing, promoting, and managing fitness/wellness programs.

EXW 575 Teaching Lifetime Fitness. (3)

spring

Organizing and implementing physical fitness programs in the schools with emphasis on individual problem solving.

EXW 591 Seminar. (1–12)

selected semesters

EXW 599 Thesis. (1–12)

selected semesters

EXW 635 Aging and Physical Activity. (3)

spring

Examines and discusses the theoretical and applied health-related research on physical activity and aging.

GRADUATE PROGRAMS AND COURSES

EXW 640 Analysis of Variance for Exercise and Wellness. (3)

fall

Analysis of variance methods with an emphasis on research measures of human performance. Prerequisite: graduate introduction to statistics.

EXW 642 Exercise Epidemiology. (3)

spring

Physical activity, exercise, and physical fitness and the development of chronic disease.

EXW 643 Correlation/Regression/Multivariate Statistics. (3)

spring

Graduate-level statistics course for Ph.D./master's students who will be doing research in the area of exercise and wellness. Prerequisite: graduate ANOVA course.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Exercise Science

Interdisciplinary Doctoral Program

espe.la.asu.edu/PhDprog.htm

480/965-7906

PEBW M201

Daniel Landers, Interim Chair, Department of Kinesiology

Bioengineering

Professor: He

Associate Professor: Sweeney

Kinesiology

Regents' Professor: Landers

Professors: Matt, Stelmach

Associate Professors: Hinrichs, Morgan, Treasure, Willis

Assistant Professors: Etnier, Ringenbach, Santello

Life Sciences

Professors: Harrison, Satterlie

Psychology

Professors: Karoly, Linder

Associate Professor: McBeath

Assistant Professors: E. Amazeen, P. Amazeen

Psychology in Education

Regents' Professor: Glass

The Committee on Exercise Science offers an interdisciplinary graduate program leading to the Ph.D. degree in Exercise Science. The committee sets guidelines and supervises programs of study. One of the unique features of this interdisciplinary program is that, because it uses faculty research and teaching interests from a number of academic units, a student may tailor a course of study to fit individual needs and goals. The committee is composed of members from the various academic units listed above. Courses, however, are not limited to these academic units. Concentrations are available in biomechanics, motor behavior, physiology of exercise, and sport psychology.

DOCTOR OF PHILOSOPHY

The Ph.D. degree in Exercise Science is an individualized interdisciplinary program that integrates graduate courses from a variety of academic units to provide a sound foundation for research leading to a dissertation. Topics for these dissertations come from one of four research areas: biomechanics, motor behavior, physiology of exercise, and sport psychology.

Admission. In addition to meeting Graduate College requirements, students must submit a letter designating a potential area of interest, the name of a potential mentor (from the list of faculty), and a statement of career goals to the director of the Committee on Exercise Science. Graduate Record Examination (GRE) scores (verbal, quantitative, and analytical), a professional résumé, and three letters of recommendation must also be submitted. All applicants whose native language is not English must submit a Test of English as a Foreign Language score. Preference is given to applicants already holding a master's degree, although exceptional students possessing only a baccalaureate degree may apply. Admission decisions are based on the compatibility of the applicant's career goals with the purpose of the degree program, previous academic training and performance, GRE scores, recommendations, and match of research interests with those of available mentors. To be considered for research or teaching assistantships, all application materials should be received before December 1.

Program of Study. The program of study consists of a minimum of 54 semester hours of graduate work beyond the master's degree (84 hours of graduate credit for applicants holding only the baccalaureate degree). Of the 84 semester hours, at least 30 hours (which may include research credit) of the approved Ph.D. program, and 24 research and dissertation hours must be completed after admission to a Ph.D. program at ASU. An individual program of study is selected in consultation with the student's supervisory committee. The program of study reflects the interdisciplinary nature of the degree program. Students are expected to have fulfilled a majority of the foundational course work before admission. Prerequisites that have not been completed must be taken as remedial work in addition to the program of study.

Foreign Language Requirements. None.

Comprehensive Examinations. Upon completion of course work and before commencing dissertation research, the student is given written and oral examinations. After the student has passed the comprehensive examinations, a dissertation committee is appointed by the dean of graduate studies. After the dissertation committee has approved the dissertation prospectus, the student is eligible to apply for admission to candidacy.

Dissertation Requirements. The dissertation must consist of a fully documented written analysis of a problem that extends the knowledge and/or theoretical framework of the field. The research should demonstrate the student's creativity and competence for independent research.

Final Examination. A final oral examination in defense of the dissertation is required. The candidate must take the

final oral examination within five years after passing the comprehensive examinations. Any exception must be approved by the supervisory committee, the director of the Committee on Exercise Science, and the dean of graduate studies and ordinarily involves repetition of the comprehensive examinations.

COURSES

For courses, refer to the course listings under the following majors: Anthropology, Bioengineering, Biology, Chemical Engineering, Chemistry, Educational Psychology, Family and Human Development, Kinesiology, and Psychology. A limited number of applicable courses are also available through other departments.

Family and Human Development

Master's Program

www.asu.edu/clas/fhd

480/965-6978

COWDN 106

Richard A. Fabes, Chair

Professors: Christopher, Fabes, Griffin, Ladd, Martin, Roosa

Associate Professors: Dumka, Hanish, Madden-Derdich, Neff, Updegraff

Assistant Professors: Gager, Liu, Spinrad, Valiente

Senior Lecturers: Bodman, Weigand

Students may pursue the M.S. degree in Family and Human Development with a concentration in family studies. Areas of study are available in child development and family relationships.

Students applying to this program are required to submit scores on the Graduate Record Examination (verbal, quantitative, and analytical sections).

MASTER OF SCIENCE

Admission. Admission to the M.S. degree program in Family and Human Development is determined by the following criteria:

1. official transcripts of all undergraduate and graduate course work;
2. verbal, quantitative, and analytical Graduate Record Examination scores;
3. statement of goals relevant to the Master of Science program;
4. three letters of recommendation; and
5. an application for admission to the Graduate College.

A Test of English as a Foreign Language score of at least 600 is required of all applicants whose native language is not English. Applicants interested in the marriage and family therapy (MFT) specialization must indicate this on their application form. Evaluation of applicants includes a personal interview. Separate application and acceptance, including an interview, is required for admission to the MFT program.

Program of Study. Courses are selected by the student along guidelines of the specific areas, after consultation with the supervisory committee. The program of study should be completed and approved by the supervisory committee by the end of the second semester of full-time graduate study upon completion of 12 semester hours. A program of study may include more than 30 semester hours, and the exact number will be determined by program requirements and the student's supervisory committee. Acceptance of the proposed program of study must be verified by signature of the student and committee members. After approval within the department or college, the program of study is submitted to the Graduate College for final approval. The following requirements must be met for the concentration.

Family Studies. Students complete the requirements for a master's degree in either child development or family relationships. Within the family relationships area, students may take courses in marriage and family therapy (MFT) sufficient to meet the AAMFT accreditation standards and MFT certification requirements for the state of Arizona. Typically, the MFT specialization is a three-year program.

Core Requirements. All students must take the following courses: FAS 500, FAS 531, CDE 531, CDE 534 or FAS 580; PSY 530; or FAS 580 or equivalent with the approval of the Graduate Committee.

Child Development. The required courses are CDE 533 and six semester hours of CDE elective selected (with approval of the student's advisor). Six semester hours of thesis work are also required.

Family Relationships. The required courses are FAS 539 and six semester hours of FAS elective (selected with approval of the student's advisor). Six semester hours of thesis work are also required.

Thesis Requirements. A thesis is required.

Final Examination. A final oral examination in defense of the thesis is required.

RESEARCH ACTIVITY

The research activities of the faculty and students in the Department of Family and Human Development (FHD) are devoted to understanding and finding solutions to some of the most contemporary and critical problems faced by children and families. These topics include issues related to the effects of social and cultural environments on children and families, such as the effects of poverty, schooling, community violence, and child care. For more information, access the Web site at www.asu.edu/clas/fhd.

In addition, FHD faculty research focuses on topics related to family and marital functioning. Specific areas

GRADUATE PROGRAMS AND COURSES

include marital interaction, parenting and parent-child relationships, sexuality, dating relationships, family diversity, approaches to marital and family therapy, divorce, step families, and public policy. Research topics related to children, adolescents, and infants include the development of emotion, gender-role development, early intervention for children who are biologically or socially at risk, the factors that promote positive infant development, the causes and treatment of childhood autism, sibling and peer relationships, and how family relationships influence childhood development. Strong emphasis is placed on the acquisition of sophisticated theoretical, methodological, and statistical skills necessary to conduct and evaluate basic and applied research.

CHILD DEVELOPMENT (CDE)

CDE 430 Infant/Toddler Development in the Family. (3)

fall and spring

Examines the development of infants/toddlers, the socialization processes of families, and the interactions of these processes. Prerequisite: CDE 232 (or its equivalent).

CDE 437 Infant Family Assessment and Observation. (3)

fall

Examines strategies for implementing developmental assessments and observations of young children and their families. Cross-listed as SWU 437. Credit is allowed for only CDE 437 or SWU 437. Prerequisite: CDE 232 or SWU 301 (or their equivalents).

CDE 444 Risk and Variation in Child Development. (3)

fall and spring

Impact that constitutional and environmental risk factors have on young children and their families. Cross-listed as SWU 446. Credit is allowed for only CDE 444 or SWU 446. Prerequisite: CDE 232 or SWU 331 (or their equivalents).

CDE 531 Theoretical Issues in Child Development. (3)

fall

Major developmental theories, related research, and their application to family interaction. Prerequisites: both CDE 430 and 437 (or their equivalents) or only instructor approval.

CDE 533 Research Issues in Child Development. (3)

spring

In-depth exploration and critique of research focusing on child development in a family setting. Prerequisites: CDE 531; FAS 500.

CDE 534 Applied Child Development. (3)

spring

Integrates child development, family theory, and research to understand developmental problems and provide a foundation for intervention. Prerequisites: CDE 531; FAS 500.

CDE 634 Advanced Applied Child Development. (3)

spring

Advanced training in research and theory-based approaches to developing and evaluating prevention programs for children at risk. Prerequisite: CDE 534 or instructor approval.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

FAMILY STUDIES (FAS)

FAS 431 Parent-Adolescent Relationships. (3)

fall

Dynamics of the relationships between parents and adolescents. Developmental characteristics of adolescence and the corresponding adult stage. Prerequisites: CDE 232; FAS 331.

FAS 435 Advanced Marriage and Family Relationships. (3)

fall and spring

Recent research, issues, and trends relating to marriage and family interaction. Influence of family composition, physical environment, family patterns, and values on family dynamics. Prerequisites: FAS 331, 361.

FAS 440 Fundamentals of Marriage and Family Therapy. (3)

fall and spring

Introduces the fundamental orientations of marriage and family therapy.

FAS 500 Research Methods. (4)

fall

Purposes of research. Experimental design, methods of data collection, and thesis proposal development. Includes practical application research laboratory. 3 hours lecture, 3 hours lab.

FAS 530 Introduction to Marriage and Family Therapy. (3)

fall

Introduces major marriage and family therapy orientations. Reviews history, theory, application, and outcome research for each orientation. Prerequisite: admission to graduate program in Family and Human Development with a concentration in family studies or instructor approval.

FAS 531 Family Theory Development. (3)

spring

Historical and current approaches to theory development, evaluation, and application in family studies. Prerequisite: FAS 435 or instructor approval.

FAS 536 Dysfunctional Marriage and Family Relationships. (3)

fall

Critical review of current theory and empirical evidence connecting marital and family interaction patterns with aberrant behavior. Prerequisite: PGS 466 or PSY 573 (or its equivalent) or instructor approval.

FAS 537 Interpersonal Relationships. (3)

fall

Critical examination of current theoretical and research developments in the area of interpersonal relationships. Emphasizes applications for research and intervention. Prerequisite: FAS 435 (or its equivalent) or instructor approval.

FAS 538 Advanced Techniques in Marriage and Family Therapy. (3)

spring

In-depth review of assumptions and advanced techniques associated with contemporary marriage and family therapy approaches. Prerequisite: a graduate-level course in marriage and family therapy or instructor approval.

FAS 539 Research Issues in Family Interaction. (3)

fall

Critical review of current and past research in the area of family dynamics. Emphasizes interactional processes within the family. Prerequisite: FAS 435 (or its equivalent) or instructor approval.

FAS 540 Assessment in Marriage and Family Therapy. (3)

spring

Assessment and outcome evaluation of couples and families involved in marital and family therapy. Lecture, lab. Prerequisites: FAS 500 (or its equivalent); PSY 530; instructor approval.

FAS 580 Marriage and Family Therapy Practicum. (1–12)

fall and spring

Supervised clinical experience in marriage and family therapy; includes development of assessment and outcome evaluation skills. Lecture, lab. Topics may include the following:

- First semester. (3)
- Second semester. (3)
- Third semester. (3)

Prerequisite: instructor approval.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Family Science

Doctoral Program

www.asu.edu/clas/fhd

480/965-6978

COWDN 106

Richard A. Fabes, Chair

Professors: Christopher, Fabes, Griffin, Ladd, Martin, Roosa

Associate Professors: Dumka, Hanish, Madden-Derdich, Updegraaf

Assistant Professors: Gager, Liu, Spinrad, Valiente

The faculty in the Department of Family and Human Development offer a degree program leading to the Ph.D. degree in Family Science. Programs of study are available in child development and family studies. An area of concentration is available in marriage and family therapy (MFT).

DOCTOR OF PHILOSOPHY

The Ph.D. degree in Family Science prepares researchers in the fields of family processes, family relationships, and human development within the context of families. Students can receive advanced training in theory, clinical strategies (MFT), research methodology, and several substantive fields that are part of family and human sciences.

The program is designed to prepare graduates to assume leadership roles in public or privately funded mental health agencies, governmental posts, or as researchers and academicians in universities. The MFT concentration also prepares students for state certification to practice as certified marriage and family therapists.

A description of the program, along with opportunities for assistantships and fellowships, may be obtained from the director of the program.

Admission. Admission to the Ph.D. in Family Science is determined by the following criteria:

1. official transcripts of all undergraduate and graduate course work;
2. verbal, quantitative, and analytical Graduate Record Examination scores;
3. statement of goals relevant to the Ph.D. program;
4. three letters of recommendation; and
5. an application for admission to the Graduate College.

A Test of English as a Foreign Language score of at least 600 is required of all applicants whose native language is not English.

Program of Study. Each student must prepare and submit a program of study in conjunction with the chair and mem-

bers of his or her supervisory committee during the first year in the program. The program of study consists of a minimum of 105 semester hours for students entering after the bachelor's degree and 63 semester hours for students entering after the master's degree. Of the 105 semester hours for a postbaccalaureate program, six are thesis credit and 24 are research and dissertation credit. Postbaccalaureate students complete a master's-in-passing before advancing to their doctoral studies. Correspondingly, the 63 semester hours of the postmaster's program include 24 semester hours of research and dissertation credit. The additional hours in both the postbaccalaureate and postmaster's tracks involve

1. family science courses,
2. clinical approaches (MFT courses—postbaccalaureate only),
3. statistics and research methods, and
4. a collateral area of study relating to family science taken outside the Department of Family and Human Development.

Foreign Language Requirements. None.

Evaluation and Comprehensive Examinations. Progress through the program involves (1) annual evaluations of the student's performance and (2) comprehensive written examinations at the end of the student's course work.

Practicum and Internship Requirements. For the MFT concentration, a minimum of 14 semester hours (postbaccalaureate) is required in clinical supervision and practicum. Students must remain enrolled continuously in practicum until they have completed 500 client contact hours and 100 hours of clinical supervision.

Dissertation Requirements. The doctoral dissertation must be a work of original scholarship, make a significant contribution to knowledge about families, and reflect a mastery of systemic research methods.

Final Examination. A final oral examination in defense of the dissertation is required.

Research and Clinical Facilities. The department's clinical and research facilities include a marriage and family clinic, marital interaction laboratory, children's social development laboratory, child development laboratory, and collaborative arrangements with the ASU Prevention Intervention Research Center. The Department of Family and Human Development also provides access to sophisticated microcomputing technology within the department as well as to centralized computing services at ASU. The department offers several fellowships that provide students with collaborative research experiences under the supervision of faculty members.

COURSES

For courses, see listings under "Family and Human Development," page 221.

Fine Arts

The CFA prefix is used by the Katherine K. Herberger College of Fine Arts for general or interdisciplinary courses.

COLLEGE OF FINE ARTS (CFA)

CFA 522 Concepts in Collaborative Multimedia. (3)

spring

Designed to bring students from different disciplines throughout the Katherine K. Herberger College of Fine Arts to experience the collaboration process in creating art. Lab, studio.

CFA 584 Internship. (1–12)

fall and spring

CFA 598 Special Topics. (1–4)

fall and spring

Topics may include the following:

- Basic Concepts of Digital Signal Processing and Programming for Artists. (3)

spring

Introduces the basic concepts behind the functioning of existing, widely used digital arts/media tools. Covers basic DSP concepts generic to all such tools (time-frequency relationships, basic signal theory [such as representational models, quantization, filtering, compression]). Concepts embellished using standard image/video/audio manipulation tools.

CFA 684 Internship. (1–12)

fall and spring

CFA 784 Internship. (1–12)

fall and spring

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 50.

French

See “Languages and Literatures,” page 253.

Geographic Information Science

Interdisciplinary Certificate Programs

www.asu.edu/giscert

480/727-7360

LSE 218

480/727-1288

QUAD 2 114

John M. Briggs, Director, Executive Committee

William Miller, Director, Executive Committee

Geography

Professor: Burns

Associate Professor: Wentz

Life Sciences

Professor: Klopatek

Associate Professor: Briggs

Planning and Landscape Architecture

Associate Professor: Guhathakurta

Under the auspices of the Graduate College, the interdisciplinary certificate program in Geographic Information Science (GIS) is administered by an Executive Committee. The objective of this program is to enable existing ASU graduate students and GIS professionals with advanced degrees to learn how to apply GIS concepts and technology for the purposes of spatial analysis.

A minimum of 16 semester hours consisting of three required and two elective courses (three semester hours each) plus a capstone seminar (one semester hour) is required to complete the GIS Certificate. For a full description of the program course work, access the GIS Web site at www.asu.edu/giscert.

Current graduate students receive priority admission to the certificate program. Students qualify for admission to the certificate program by maintaining good standing in a cooperating department and completing an application specific to the GIS Certificate. Practicing professionals who already hold a graduate degree furnish proof of an advanced degree by a formal transcript and enroll as nondegree graduate students through the Graduate College. Prospective students must complete prerequisites listed for the level one required course, or pass a proficiency test.

Geographic Information Systems

See “Master of Advanced Study,” page 225.

Geography

Master's and Doctoral Programs

geography.asu.edu

480/965-7533

SCOB 330

Richard J. Aspinall, Chair

Professors: Arreola, Aspinall, Balling, Brazel, Burns, Cerveny, Dorn, Gober, Ó hUallacháin, Pasqualetti, Zehnder

Associate Professors: Ellis, Fall, Kuby, McHugh, Wentz

Assistant Professors: Edsall, Keys, Li, Lukinbeal, Schmeackle

Lecturer: Shaeffer

The faculty in the Department of Geography offer graduate programs leading to the M.A. and Ph.D. degrees in Geography. Departmental research and graduate education focus on seven areas of study: climatology, earth-surface processes, natural resources and environment, urban-economic geography, population, Latin America and the Southwestern United States, and spatial analysis methods.

Students admitted to the Master of Education degree program with a major in Secondary Education may also elect geography as the subject matter field. See "Master of Education," page 189, for information on the Master of Education degree.

MASTER OF ARTS

The M.A. program is designed to offer a specialized program of academic and professional training in geography so that the student may secure a sound graduate background for further specialization or for immediate employment. The program has sufficient flexibility to allow for individual needs and interests of the student. A minimum of 30 semester hours beyond the bachelor's degree is required. At least 24 semester hours must be in geography.

Admission. Applications for the M.A. program must be accompanied by the applicant's scores on the Graduate Record Examination (verbal and quantitative) and three letters of recommendation from professors. All applications are reviewed by the Graduate Recruiting and Admissions Committee and the chair of the Department of Geography. To be considered for financial assistance for the next academic year, students must be admitted by February 15.

It is presumed that all students entering the master's program have an adequate background in geography, including course work that is the equivalent of GPH 371 Introduction to Cartography and Georepresentation and GCU 495 Quantitative Methods in Geography. Additional prerequisite course work is required of students insufficiently prepared

in geography. The program of study consists of the following elements:

GCU 529 Contemporary Geographic Thought	3
GCU 585 Advanced Research Methods in Geography	3
GCU 591 Seminar	3
or GPH 591 Seminar (3)	
GCU 599 Thesis	6
or GPH 599 Thesis (6)	
Total	15

The remaining 15 semester hours are composed of a suitable combination of course work and/or research.

A student in the M.A. program is required to pass an oral and a written examination administered by the student's supervisory committee. The written examination consists of questions from the area of interest. The oral examination serves as a defense of the thesis.

MASTER OF ADVANCED STUDY

The Master of Advanced Study (M.A.S.) degree in Geographic Information Systems (GIS) program is a compact one-year nonthesis degree fostering advanced study in management and the use of GIS technology in public and corporate environments. The degree meets important educational needs of working professionals and recent college graduates seeking to improve their career standing. The program provides a comprehensive professional degree that balances work in the theoretical aspects of GIS, the technical side of the discipline, and the applications domain. Students are exposed to cutting edge technology, management theory and practice, and several societal dimensions associated with the application of GIS technology. Courses are held in the evenings and on weekends, the curriculum is highly adaptable to the work environment, and thus the M.A.S. degree is achievable in a one-year time period.

Admission. In addition to ASU Graduate College standards, prospective students seeking the degree must (1) have successfully completed a bachelor's degree in a related area with a minimum GPA of 3.00 (4.00 scale) or (2) demonstrate a minimum of three years of related professional experience and the successful completion of a bachelor's degree in an unrelated area as determined by the M.A.S.-GIS Steering Committee. Applicants must submit two letters indicating support from any combination of current/former instructors, supervisors, or professionals currently employed within GIS or a related discipline. Applicants must prepare a formal, written statement regarding relevant academic experience, professional experience, and overall interest in GIS. Application materials for the coming academic year are accepted and reviewed on a rolling basis until June 30. Applicants are notified of their status within six weeks of receipt of their application materials.

Program of Study. Enrolling students must complete three sequential semesters of course work totaling 30 semester hours. The first semester, offered during the fall, is composed of six two-semester-hour modules (12 hours total). Each module has a minimum of 30 hours of instructor contact time and 60 hours of out-of-class assignments; each module lasts two weeks. Students in the spring semester must complete one mandatory and three elective 15-week

GRADUATE PROGRAMS AND COURSES

advanced courses, each worth three semester hours (12 hours total). During the final semester, offered through the eight-week summer session, students must complete six semester hours of internship in a GIS or closely allied position approved by the M.A.S.-GIS Steering Committee.

DOCTOR OF PHILOSOPHY

Admission to the Ph.D. program requires a completed master's degree in Geography or equivalent preparation. At a minimum this preparation should include competence in cartography and quantitative methods and basic course work in human and physical geography. Students who have not already acquired these basic skills or taken these basic courses must do so during the first year of their graduate program. These courses are considered prerequisites.

To be considered for financial assistance for the next academic year, students must be admitted by February 15.

The specific academic program is carefully planned by the student in consultation with a supervisory committee. Special efforts are taken to plan a course of study compatible with the student's career objectives.

See "Doctor of Philosophy," page 96, for general requirements.

Program of Study. A minimum of 30 semester hours of course work at ASU beyond the master's degree is required, plus a minimum of 24 semester hours of credit in research and dissertation. All Ph.D. students are required to take

1. GCU 529 Contemporary Geographic Thought
2. GCU 585 Advanced Research Methods in Geography, and
3. two three-semester-hour seminars (GCU 591 or GPH 591).

Foreign Language Requirements. At the discretion of the student's supervisory committee, a reading proficiency in a foreign language may be required.

Research and Field Examination. The Department of Geography requires Ph.D. students to pass a two-week research and field problem examination before taking the comprehensive examination.

Comprehensive Examinations. Written and oral comprehensive examinations are required. These are taken at the completion of all course work. After students have passed the comprehensive examinations and satisfied the other requirements, they are eligible to apply for candidacy.

Dissertation Requirements. A dissertation based on original work demonstrating creativity in research and scholarly proficiency in the subject area is required.

Final Examination. A final oral examination in defense of the dissertation is required.

CULTURAL GEOGRAPHY (GCU)

GCU 414 Teaching Geography Standards. (3)

fall and summer

Introduces Arizona Geography Standards for K–12 educators, emphasizing exciting curricula and illustrated with best practices by master teachers. Internet.

GCU 421 Geography of Arizona and Southwestern United States. (3)

fall and spring

Geography of the Southwest with an emphasis on Arizona. Divided into physical geography, history, people, and economy.

GCU 423 Geography of South America. (3)

selected semesters

Prerequisite: GCU 323 or instructor approval.

GCU 424 Geography of Mexico and Middle America. (3)

selected semesters

Central America and Mexico. Prerequisite: GCU 323 or instructor approval.

GCU 425 Geography of the Mexican American Borderland. (3)

spring

Geography of a binational and bicultural region. Examines settlement, boundary issues, ethnic subregions, population change, industrial development, and urban growth. Field trips. Fee.

GCU 426 Geography of Russia and Surroundings. (3)

selected semesters

Examines the geography of Russia and other post-Soviet states. Prerequisite: GCU 121 or instructor approval.

GCU 433 Geography of Southeast Asia. (3)

selected semesters

Examines the biophysical and social features of Southeast Asian nations and peoples. Prerequisite: GCU 326 or instructor approval.

GCU 441 Economic Geography. (3)

once a year

Spatial distribution of primary, secondary, and tertiary economic and production activities. Prerequisite: GCU 141 or instructor approval.

GCU 442 Geographical Analysis of Transportation. (3)

fall

Networks, modes, economics, and flows at the urban, national, and international scales. Prerequisite: GCU 141 or 441.

GCU 444 Geographic Studies in Urban Transportation. (3)

selected semesters

Current urban transportation issues in metropolitan Phoenix. Lecture, team project. Fee. Prerequisite: GCU 361.

GCU 453 Recreational Geography. (3)

selected semesters

Examines problems surrounding the organization and use of space for recreation. Introduces geographic field survey methods of data collection and analysis. Possible Saturday field trips.

GCU 455 Historical Geography of U.S. and Canada. (3)

selected semesters

Geographical perspective on the evolution of the United States and Canada from pre-Columbian times to early 20th century.

GCU 474 Public Land Policy. (3)

selected semesters

Geographic aspects of federal public lands, policy, management, and issues. Emphasizes western wilderness and resource development problems.

GCU 495 Quantitative Methods in Geography. (3)

fall and spring

Statistical techniques applied to the analysis of spatial distributions and relationships. Introduces models and theory in geography. Fee. Prerequisite: MAT 119.

GCU 496 Geographic Research Methods. (3)

fall and spring

Scientific techniques used in geographic research. Fee. Prerequisites: GCU 495; GPH 371, 491.

GCU 515 Human Migration. (3)

selected semesters

Economic, political, social, and geographic factors underlying population movements. Migration selectivity, streams and counter-streams, labor migration, and migration decision making. Lecture, seminar. Prerequisite: GCU 351 or instructor approval.

GCU 526 Spatial Land-Use Analysis. (3)

selected semesters

Determination, classification, and analysis of spatial variations in land-use patterns. Examines the processes affecting land-use change. Prerequisite: 15 hours in geography or instructor approval.

GCU 529 Contemporary Geographic Thought. (3)*fall*

Comparative evaluation of current philosophy concerning the nature and trends of geography. Prerequisites: 15 hours in geography; instructor approval.

GCU 585 Advanced Research Methods in Geography. (3)*spring*

Specialized research techniques and methodologies in economic, political, or cultural geography.

GCU 591 Seminar. (1–3)*fall, spring, summer*

Selected topics in economic, political, or cultural geography. Possible field trips. Topics may include the following:

- Transportation Systems Pro-Seminar
- Urban Geographic Information Systems

GCU 596 History of Geographic Thought. (3)*selected semesters*

Historical development of geographic thought from pre-Greek days to the early 20th century.

GCU 598 Special Topics. (1–4)*selected semesters*

Topics may include the following:

- Geography of the Mexican American Borderland. (3)
Fee.

GCU 599 Thesis. (6)*fall and spring*

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

PHYSICAL GEOGRAPHY (GPH)**GPH 401 Topics in Physical Geography. (1–3)***selected semesters*

Open to students qualified to pursue independent studies. Possible field trips. Prerequisite: instructor approval.

GPH 405 Energy and Environment. (3)*spring*

Sources, regulatory and technical controls, distribution, and consequences of the supply and human use of energy. Fee. Prerequisite: a course in physical or life sciences or instructor approval.

GPH 409 Synoptic Meteorology I. (4)*selected semesters*

Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis. Prerequisites: MAT 270; PHY 131, 132.

GPH 410 Synoptic Meteorology II. (4)*selected semesters*

Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis. Prerequisite: GPH 409.

GPH 411 Physical Geography. (3)*once a year*

Introduces physiography and the physical elements of the environment. Credit is allowed for only GPH 411 or 111. Field trips.

GPH 412 Physical Climatology. (3)*once a year*

Physical processes in the earth-atmosphere system on regional and global scales; concepts and analysis of energy, momentum, and mass balances. Prerequisites: both GPH 212 and 213 or only instructor approval.

GPH 413 Meteorological Instruments and Measurement. (3)*once a year*

Design and operation of ground-based and aerological weather measurement systems. Collection, reduction, storage, retrieval, and analysis of data. Field trips. Prerequisites: both GPH 212 and 213 or only instructor approval.

GPH 414 Climate Change. (3)*once a year*

Survey of three climate research areas: paleoclimatology, theories (e.g., greenhouse warming), numerical modeling. Prerequisite: GPH 212 or instructor approval.

GPH 418 Landforms of the Western United States. (3)*once a year*

Studies landforms and geomorphic processes in the western United States, including lecture, topographical maps, aerial photographs, satellite imagery, and field trips. Lecture, critical inquiry, laboratory, field work. Fee. Prerequisites: GPH 211 (or its equivalent); a General Studies L course.

GPH 422 Plant Geography. (3)*once a year*

Plant communities of the world and their interpretation, emphasizing North American plant associations. Cross-listed as PLB 422. Credit is allowed for only GPH 422 or PLB 422. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 or only GPH 111.

GPH 433 Alpine and Arctic Environments. (3)*selected semesters*

Regional study of advantages and limitations of the natural environment upon present and future problems involving resource distribution, human activities, and regional and interregional adjustments. Field trips. Prerequisite: GPH 111 or instructor approval.

GPH 471 Geographics: Interactive and Animated Cartography and Geovisualization. (3)*selected semesters*

Advanced cartography, stressing influence and application of the computer on geographic representation. Emphasizes creation of maps for the Internet. Lecture, lab. Fee. Prerequisite: GPH 371 or instructor approval.

GPH 473 Geographic Information Science II. (3)*fall*

GIS as a basis for microcomputer spatial analysis and synthesis. Includes digitizing, database organization, spatial retrieval, and graphics. Lecture, lab. Fee. Prerequisites: GPH 373 (or instructor approval); CSE 100.

GPH 474 Dynamic Meteorology I. (3)*selected semesters*

Large-scale atmospheric motion, kinematics, Newton's laws, wind equation, baroclinics, vorticity, and the midlatitude depression. Prerequisites: GPH 213, 215; MAT 271; PHY 131, 132.

GPH 475 Dynamic Meteorology II. (3)*selected semesters*

Topics in climate dynamics. General circulation, numerical modeling, teleconnection phenomena, and surface-atmosphere interaction. Prerequisite: GPH 474 or instructor approval.

GPH 481 Environmental Geography. (3)*selected semesters*

Problems of environmental quality, including uses of spatial analysis, research design, and field work in urban and rural systems. Field trips. Prerequisite: instructor approval.

GPH 483 Geographic Information Analysis. (3)*selected semesters*

Basics of spatial data analysis. Topics include point pattern analysis, spatial autocorrelation, spatial regression, and kriging. Lecture, lab. Fee. Prerequisites: both one 200-level or above course in geography or biology or plant biology or geology or planning and one basic statistics course (GCU 495).

GPH 491 Geographic Field Methods. (3)*once a year*

Field techniques, including use of aerial photos, large-scale maps, and fractional code system of mapping; urban and rural field analysis to be done off campus. Fee. Prerequisites: GCU 102, 121; GPH 111.

GPH 494 Special Topics. (1–4)*selected semesters***GPH 511 Fluvial Processes. (3)***selected semesters*

Geographical aspects of processes of river erosion, transportation, sedimentation: emphasizing spatial characteristics of forces, resistance, landforms, sediment; includes computer applications. Prerequisites: both GPH 111 (or GLG 101) and 211 (or GLG 362) or only instructor approval.

GPH 573 Geographic Information Science III. (3)*spring*

In-depth look at programming within GIS. Focuses on programming and methodology, utilizing specific software, and basic scientific

GRADUATE PROGRAMS AND COURSES

computing. Lecture, lab. Fee. Prerequisite: GPH 473 or instructor approval.

GPH 575 Geographic Applications of Remote Sensing. (3) *selected semesters*

Uses imaging and nonimaging methods of remote acquisition of data, including satellite sensors, airborne radar, multiband scanning, conventional photographic sensors, and ground-based equipment. Field trips. Prerequisites: GCU 585 (or GPH 491); GPH 372.

GPH 591 Seminar. (1–3)

fall and spring

Selected topics in physical geography. Possible field trips.

GPH 596 Advanced Spatial Statistics. (3)

spring

Multivariate and advanced statistical techniques, including Box-Jenkins modeling and spectral analysis. Requires project papers and presentations. Seminar. Prerequisite: GCU 495 (or its equivalent).

GPH 598 Special Topics. (1–4)

selected semesters

Topics may include the following:

- Energy and Environment
- Fee.

GPH 599 Thesis. (6)

fall and spring

GPH 601 Introduction to Geographic Information Systems. (2)

fall

Introduces GIS theory and practice for professionals. Module 1 of the fall semester for M.A.S.-GIS professional degree program. Lecture, lab. Prerequisite: acceptance into the M.A.S.-GIS program.

GPH 602 Intermediate GIS. (2)

spring

Intermediate GIS for the M.A.S.-GIS program. Lecture, hands-on training. Prerequisite: GPH 601.

GPH 603 Spatial Statistics and Modeling. (2)

fall

Spatial statistics and modeling for the M.A.S.-GIS program. Lecture, hands-on training. Prerequisite: GPH 602.

GPH 604 GIS Implementation in the Corporate and Public Sectors. (2)

fall

Uses GIS in the corporate and public sectors. GIS ethics. Required for the M.A.S.-GIS program. Lecture, hands-on training. Prerequisite: GPH 603.

GPH 605 GIS Project: Real-World GIS Project Planning and Implementation for Public Sector Agencies. (2)

fall

GIS project development for the public sector. Required for the M.A.S.-GIS program. Lecture, lab. Prerequisite: GPH 604.

GPH 606 GIS Project Presentation. (2)

fall

Mastering technical project presentation for GIS professionals. Required for the M.A.S.-GIS program. Lecture, hands-on training. Prerequisite: GPH 605.

GPH 610 Programming the GIS Environment. (3)

spring

Programming the GIS environment for the M.A.S.-GIS program. Required for the M.A.S.-GIS program. Lecture, hands-on training. Prerequisite: GPH 606.

GPH 620 Remote Sensing. (3)

spring

Remote sensing for the M.A.S.-GIS program. Lecture, hands-on training. Prerequisite: GPH 606.

GPH 630 Air Photo Interpretation for M.A.S.-GIS. (3)

spring

Air photo interpretation for the M.A.S.-GIS program. Lecture, hands-on training. Prerequisite: GPH 606.

GPH 640 GIS for Business. (3)

spring

Uses GIS in business for the M.A.S.-GIS program. Lecture, hands-on training. Prerequisite: GPH 606.

GPH 650 GIS for the Internet. (3)

spring

GIS for the Internet. Lecture, hands-on training. Prerequisite: GPH 606.

GPH 684 M.A.S.-GIS Internship. (6)

summer

Internship for the M.A.S.-GIS program. Prerequisite: instructor approval.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Geological Sciences

Master's and Doctoral Programs

geology.asu.edu

480/965-5081

PS F686

James A. Tyburczy, Chair

Regents' Professors: Buseck, Christensen, Greeley

Edgar and Helen Korrick Presidential Professor:
Christensen

Dee and John Whiteman Dean's Distinguished Professor: Leshin

Professors: Burt, Farmer, Fink, Holloway, Knauth, Peacock, Reynolds, Shock, Stump, Tyburczy, Williams

Associate Professors: Anbar, Arrowsmith, Leshin, Sharp

Assistant Professors: Clarke, Fouch, Garnero, Hartnett, Semken

The faculty in the Department of Geological Sciences offer graduate programs leading to the M.S. and Ph.D. degrees in Geological Sciences.

Students admitted to the Master of Education degree program in Secondary Education may also elect geological sciences as the subject matter field. See "Master of Education," page 189, for information on the Master of Education degree.

The faculty also participate in the programs leading to the Master of Natural Science degree when one of the concentrations is geological sciences. See "Natural Science," page 287, for information on the Master of Natural Science degree.

Students applying for admission to the M.S., M.N.S., or Ph.D. degree program must submit scores on the Graduate Record Examination (GRE) Aptitude Test. The deadline for applications for the fall term is December 15.

MASTER OF SCIENCE

The M.S. degree consists of a minimum of 30 semester hours of work beyond the bachelor's degree; 20 or more semester hours consist of course work other than research

and thesis. The program is designed to provide fundamental graduate training in geology and to prepare the student for certain careers in geology or for further graduate study.

Program of Study. The student, with the approval of the advisor, selects courses that make a coherent program of study. Each M.S. candidate must include on the program of study one hour of GLG 500 Geology Colloquium and six hours of GLG 592 Research and GLG 599 Thesis, at least three of which must be GLG 599 Thesis. A maximum of six hours of thesis may appear on a program of study. One-half of the credits applicable toward the degree must be in geological sciences courses; the remainder may include work either in geological sciences or related fields.

Thesis Requirements. A thesis based on field, laboratory, and library study is required.

Final Examination. A final oral examination in defense of the thesis is required.

DOCTOR OF PHILOSOPHY

The Ph.D. degree consists of a minimum of 54 semester hours of work beyond the master's degree. At least 25 semester hours must consist of course work other than research and dissertation. The program is designed to develop creative scholarship and to prepare the student for a professional career in geology.

See "Doctor of Philosophy," page 96, for general requirements.

Program of Study. The program of study is selected with the recommendation of the student's supervisory committee. Each Ph.D. candidate must include on the program of study one hour of GLG 500 Geology Colloquium and at least 24 semester hours of a combination of GLG 792 Research and GLG 799 Dissertation.

Foreign Language Requirements. None.

Comprehensive Examination. The student's supervisory committee must determine the content of the comprehensive examination, consisting of a written and an oral examination. Students are required to take the comprehensive examination during their third semester in residence in the Ph.D. program.

Dissertation Requirements. A dissertation based on original work demonstrating creativity in research and scholarly proficiency in the subject area is required.

Final Examination. A final oral examination in defense of the dissertation is required.

RESEARCH ACTIVITY

Recent faculty and student research topics include the following.

Biogeochemistry. Sources, cycles, and fates of biogenic elements; cycles of metals and trace nutrients; signatures of microbial life preserved in the rock record; organic geochemistry; microbial geochemistry; combining genomics and proteomics with geochemical processes; subsurface biosphere; hydrothermal ecosystems; abiotic organic syn-

thesis; development of sensors for continuous observation of biogeochemical reactions; application of thermodynamics to bioenergetics; impact of human activities on natural biogeochemical processes; urban biogeochemical fluxes and processes; dynamics of transport of organic compounds, nutrients, and cells; life detection; habitability; astrobiology; characterization of dissolved organic matter in aquatic and marine systems; bioavailability of dissolved organic compounds in surface waters; electrospray-ionization mass spectrometric methods for quantifying dissolved organic compounds; correlation of in situ rates of geochemical processes; and molecular measures of microbial genetic expression.

Geochemistry. Isotope geochemistry; environmental and aqueous geochemistry; geochemistry and microbiology of hydrothermal systems; paleoclimate records; thermodynamics of fluid-mineral interfaces; synchrotron-based X-ray spectroscopies; secondary ion mass spectrometry; analytical and theoretical chemical studies of meteorites with application to Mars and early solar system evolution; geochemical exploration for ore deposits; trace element partitioning between minerals, fluids, and magmas; atmospheric geochemistry; paleoceanography; and stable isotopic applications in geobiology.

Geomorphology. Fault zone landforms and structure; earthquake surface rupture and paleoseismology; theoretical studies of faulting and hillslope development; engineering geologic field methods.

Geophysics. Seismology; mantle anisotropy; core-mantle boundary region; geodynamics, mantle flow and rheology; seismotectonics; earthquake surface rupture and paleoseismology; environmental geophysics; high pressure experimental geophysics; mantle structure; physics and chemistry of earth and planetary interiors; thermal modeling of subduction zones.

Geoscience Education. Educational research on the learning and teaching of geoscience; studies of geoscience learning in the field, lab, classroom, and online environments; innovative teaching methods; applications of instructional technologies; design of competencies and assessment instruments; spatial and temporal visualization; place-based and culturally-mediated teaching; ethnogeology; mathematics in the geoscience curriculum; teacher preparation and enhancement; curriculum development; and geoscience reform.

Mineral Physics. Electrical properties of silicate minerals, melts, and partial melts; effects of shock on hydrous minerals; shock-induced metamorphism and phase transitions in meteorites; grain boundary diffusion; kinetic processes and reaction mechanisms; mineral deformation and deformation microstructures; high temperature, high pressure studies of mantle materials.

Mineralogy. High-resolution transmission electron microscopy; order/disorder in clays and related minerals; amorphous to crystalline transitions; graphitic carbon and the structures of poorly crystalline materials; polytypism and stacking sequences in sheet silicates (micas, chlorites, clays); mechanisms of phase transitions; surface studies; scanning tunneling and atomic force microscopy of mineral surfaces; determination of oxidation states and specific site

GRADUATE PROGRAMS AND COURSES

environments through electron energy-loss spectroscopy (EELS); TEM cathodoluminescence studies of defects; airborne minerals: small airborne particles, air quality, air pollution; mineral thermodynamics and spectroscopy; high pressure mineralogy; phase transformation studies.

Paleontology/Paleoecology. Geobiology and the role of organisms in sedimentary processes; early biosphere evolution and the fossil record of early multicellular life; invertebrate paleontology; evolutionary paleoecology; stable isotopic and geochemical techniques; biological response to global change; ichnology; exopaleontology and the exploration for fossil records of extraterrestrial life.

Petrology. High temperature, high pressure phase equilibrium experiments, and models for the origin of major igneous rock types; volatile diffusion in silicate melts; experimental determination of mantle minerals and melts; field and analytical studies of temperature, pressure, and fluids during metamorphism; computer modeling of heat and mass transfer at convergent plate margins; subduction zones; continental extension; mineral equilibria in ore deposits.

Planetary Studies. Compositional and physical properties of the terrestrial planets; comparative geomorphology of the moon, Earth, Mars, Mercury, Venus, and the outer planet satellites; Venus tectonics; thermal infrared spectroscopy of planetary materials; planetary volcanic processes; laboratory simulation of eolian processes on Venus, Mars, and Earth; impact cratering experiments; meteorite studies; micro- and isotopic analysis of meteorites and planetary materials.

Remote Sensing. Geologic mapping based on integrated field and remote sensing studies; multispectral mineralogical investigations; urban environmental studies.

Structure and Tectonics. Structural and tectonic evolution of Arizona and the North American Cordillera; regional geology of the Transantarctic Mountains; Cordilleran tectonics; relation between fluid and tectonic processes; active tectonic processes.

Volcanology. Explosive eruption processes; mechanisms of dike intrusion; structures in lava flows; multiphase flow in volcanic and geothermal systems; textures and volatile contents of volcanic domes; mineralization related to rhyolite domes; laboratory simulation of lava flow processes; field studies throughout the western United States, Hawaii, and Central and South America.

For details about the most current research activity, see the Geological Sciences Web site at geology.asu.edu.

Astrobiology Institute. Astrobiology is broadly defined as “the study of the origin, evolution, and distribution of life in the universe.” ASU is one of 11 partnering institutions in the United States composing the NASA Astrobiology Institute (NAI). In addition to supporting basic research in astrobiology, the NAI seeks to enhance opportunities for graduate students desiring cross-disciplinary training in such areas as the organic chemistry of extraterrestrial materials, origin of life studies, early biosphere evolution, and the exploration for life elsewhere in our solar system and beyond. The ASU Astrobiology Program is made up of a distributed faculty drawn from the Departments of Geological Sciences, Chemistry and Biochemistry, Biology, Physics and Astron-

omy, and the School of Life Sciences. The ASU Astrobiology Program also provides opportunities for regular interactions with other institute partners around the country through the use of advanced telecommunications and the next generation Internet.

Center for Solid State Science, Materials Research Science and Engineering Center, and Affiliated Departments. Analytical equipment routinely used by Geological Sciences students includes a JEOL JSX-8600 electron microprobe analyzer/SEM equipped with an image analysis system; 10 transmission electron microscopes specialized for high-resolution imaging ($\leq 1.7 \text{ \AA}$ resolution), EELS and EDS chemical analysis; and surface analytical microscopies (XPS, Auger and probe microscopies). Automated X-ray diffraction and fluorescence facilities are available, as is an ion microprobe. The high-pressure laboratory for experimental petrology is equipped with a complete range of vessels for investigations ranging from hydrothermal alteration to partial melting of planetary mantles.

Space Photography Laboratory. The Space Photography Laboratory contains an extensive research collection of photographs of the moon, Mars, Mercury, and outer planet satellites. A dedicated image processing facility with interactive and hardcopy capabilities is available for research utilizing spacecraft images.

Center for Meteorite Studies. The Department of Geological Sciences houses one of the largest collections of meteorites in the world. Geochemical and cosmochemical research is being undertaken in the Center for Meteorite Studies, including the following topics: trace element geochemistry, nature of asteroidal interiors, computer models of condensation in the nebula, meteorite mineralogy, organic compound investigations, chemical fractionation in meteorites, elemental partitioning in meteoritic minerals, transmission electron microscopy of chondritic meteorites, and fluid-rock interactions on asteroids and Mars.

GEOLOGICAL SCIENCES (GLG)

GLG 404 Fundamentals of Planetary Geology. (3)

fall

Surveys planetary topics, including impacts, tectonics, and volcanism on planetary objects, and use of spacecraft data, including geological mapping. Lectures, problem sets, weekend field trip. Fee. Prerequisite: Geology major or degree or instructor approval.

GLG 405 Geology of the Moon. (3)

selected semesters

Current theories of the origin and evolution of the moon through photogeological analyses and consideration of geochemical and geophysical constraints. Possible field trips to examine Arizona geology. Fee. Prerequisite: GLG 105 or instructor approval.

GLG 406 Geology of Mars. (3)

selected semesters

Geological evolution of Mars through analyses of spacecraft data, theoretical modeling, and study of terrestrial analogs; emphasizes current work. Possible field trips to examine Arizona geology. Fee. Prerequisite: GLG 105 or instructor approval.

GLG 410 Computers in Geology. (3)

fall

Geological computer skills, including data processing, visualization, presentation, numerical analysis, software and hardware applications. 2 hours lecture, 3 hours lab. Prerequisites: both GLG 101 and an upper-division course in geology or only instructor approval.

GLG 412 Geotectonics. (3)

selected semesters

Earthquakes, earth's interior, formation of oceanic and continental crust, and plate tectonics. Emphasizes current work. Prerequisite: GLG 310.

GLG 416 Field Geophysics. (3)

spring

Methods of applied geophysical exploration; seismic refraction, gravity, electrical resistivity, geomagnetics. Includes survey planning, data acquisition, processing, analysis, and interpretation. Lecture, field exercises. Prerequisite: a course in geology or instructor approval.

GLG 418 Geophysics. (3)

fall

Solid earth geophysics; geomagnetism, gravity, seismology, heat flow. Emphasizes crust and upper mantle. Prerequisites: a combination of GLG 310 and MAT 272 and PHY 131 or only instructor approval.

GLG 419 Geodynamics. (3)

selected semesters

Emphasizes application of continuum principles to geological problems, including lithospheric stresses, heat transfer, fluid mechanics, and rock rheology. Prerequisite: PHY 131.

GLG 420 Volcanology. (3)

once a year

Distribution of past and present volcanism, types of volcanic activity, mechanism of eruption, form and structure of volcanoes, and geochemistry of volcanic activity. Possible weekend field trips. Fee. Prerequisite: GLG 424.

GLG 424 Petrology. (3)

fall

Origin of igneous and metamorphic rocks. Optical mineralogy, hand specimen identification, and thin-section analysis. 2 hours lecture, 3 hours lab, possible weekend field trips. Fee. Prerequisite: GLG 321.

GLG 430 Paleontology. (3)

fall

Introduces concepts and analytical techniques in biogeology, paleobiology, paleoecology, and paleoenvironmental reconstruction from the fossil record. 2 hours lecture, 3 hours lab. Fee. Prerequisites: both GLG 102 and MAT 270 (or 290) or only instructor approval.

GLG 435 Sedimentology. (3)

spring

Origin, transport, deposition, and diagenesis of sediments and sedimentary rocks. Physical analysis, hand specimen examination, and interpretation of rocks and sediments. 2 hours lecture, 3 hours lab, possible weekend field trips. Fee. Prerequisites: GLG 102, 321.

GLG 441 Ore Deposits. (3)

selected semesters

Origin, occurrence, structure, and mineralogy of ore deposits. Possible weekend field trips. Fee. Prerequisite: GLG 424 or instructor approval.

GLG 451 Field Geology I. (3)

spring

Geological mapping techniques using topographic maps and aerial photos. Intensive field-based instruction. Lab. Fee. Prerequisites: GLG 310, 321.

GLG 452 Field Geology II. (3)

summer

Continuation of GLG 451. Lab. Fee. Prerequisite: GLG 451.

GLG 455 Advanced Field Geology. (3-4)

once a year

Geologic mapping in igneous, sedimentary, and metamorphic terrains of the Basin and Range province of Arizona. May be repeated for credit. Weekend field trips. Fee. Prerequisite: instructor approval.

GLG 456 Cordilleran Regional Geology. (3)

selected semesters

Systematic coverage through space and time of the geological development of western North America, emphasizing the western United States. Fee. Prerequisite: senior major or graduate student in Geological Sciences or instructor approval.

GLG 460 Astrobiology. (3)

fall and spring

Origin, early evolution, distribution, and future of life on Earth and elsewhere in the cosmos. May be repeated for credit. Lecture, discussion, video conferences, possible field trips. Cross-listed as AST 460/

BIO 460/CHM 483/MIC 475. Credit is allowed for only AST 460 or BIO 460 or CHM 483 or GLG 460 or MIC 475. Prerequisite: instructor approval.

GLG 461 Geomicrobiology. (3)

spring

Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and minerals. Cross-listed as MIC 461. Credit is allowed for only GLG 461 or MIC 461. Prerequisites: introductory courses in chemistry and microbiology (or geological sciences); instructor approval.

GLG 470 Hydrogeology. (3)

spring

Geology of groundwater occurrence, aquifer and well hydraulics, water chemistry and quality, contaminant transport, remediation. Emphasizes quantitative methods. Prerequisites: GLG 101 (or 103); MAT 270; PHY 121.

GLG 481 Geochemistry. (3)

spring

Origin and distribution of the chemical elements. Geochemical cycles operating in the earth's atmosphere, hydrosphere, and lithosphere. Cross-listed as CHM 481. Credit is allowed for only CHM 481 or GLG 481. Prerequisite: CHM 341 (or 346) or GLG 321.

GLG 485 Meteorites and Cosmochemistry. (3)

selected semesters

Chemistry of meteorites and their relationship to the origin of the earth, solar system, and universe. Cross-listed as CHM 485. Credit is allowed for only CHM 485 or GLG 485.

GLG 490 Topics in Geology. (1-3)

fall, spring, summer

Special topics in a range of fields in geology. May be repeated for credit. Fee. Prerequisite: instructor approval.

GLG 500 Geology Colloquium. (1)

fall and spring

Presentation of recent research by faculty and invited guests. 1 semester required for all Geological Sciences graduate students. May be repeated for a total of 2 semester hours. Requires research paper. Prerequisite: instructor approval.

GLG 501 Geology of Arizona. (3)

once a year

Basic and historical geology, fossils, mining, energy resources, environmental problems, landscape development, and meteorites, cast in examples from Arizona. Requires research paper.

GLG 504 Geology of the Grand Canyon. (2)

selected semesters

Reviews the discovery, history, origin, and geology of the Grand Canyon of the Colorado River in Arizona. Requires 6-day field trip down the river (first 6 days after commencement in May) at student's expense. Requires field research and term paper on trip.

GLG 510 Advanced Structural Geology. (3)

selected semesters

Mechanics of rock deformation, emphasizing relationship between field observation, theory, and experiment. Stress, strain, simple constitutive relationships, failure criteria, and the basis of continuum methods. Possible field trips. Fee. Prerequisites: both GLG 310 and 424 or only instructor approval.

GLG 520 Advanced Physical Volcanology. (2-3)

selected semesters

Selected volcanologic topics, including explosive eruption processes, lava flow mechanics, and intrusive mechanisms. Possible field trips. Fee. Prerequisite: GLG 420 or instructor approval.

GLG 524 Advanced Igneous Petrology. (3)

selected semesters

Theoretical and practical aspects of the genesis of igneous rocks. Study of selected sites. Modern laboratory techniques. 2 hours lecture, 3 hours lab, possible weekend field trips. Fee. Prerequisite: GLG 424.

GLG 581 Isotope Geochemistry. (3)

selected semesters

Geochemistry and cosmochemistry of stable and radioactive isotopes; geochronology; isotope equilibria. Prerequisite: instructor approval.

GRADUATE PROGRAMS AND COURSES

GLG 582 Physical Geochemistry. (3)

selected semesters

Applies thermodynamic and kinetic principles to geochemical processes. Prerequisite: CHM 341 (or 346) or GLG 321.

GLG 591 Seminar. (1-3)

fall, spring, summer

Topics in a range of fields in geology. May be repeated for credit. Fee. Prerequisite: instructor approval.

GLG 592 Research. (1-12)

fall, spring, summer

GLG 598 Special Topics. (1-4)

fall, spring, summer

Special topics in geological sciences. May be repeated for credit.

Topics may include the following:

- Advanced Field Geology. (1-3)
Fee.
- Clastic Sedimentology and Petrology. (1-3)
Fee.
- Cordilleran Regional Geology. (1-3)
Fee.
- Fundamental Planetary Geology. (1-3)
- Geology of Mars. (1-3)
Fee.
- Methods in Geoscience Teaching. (1-3)
- Ore Deposits. (1-3)
Fee.
- Orogenic Systems. (1-3)
- Petrology-Petrography. (1-3)
Fee.
- Principles of Stratigraphy. (1-3)
Fee.
- Remote Sensing. (1-3)
- Sedimentology. (1-3)
Fee.
- Volcanology. (1-3)
Fee.

Prerequisite: instructor approval.

GLG 599 Thesis. (1-12)

fall, spring, summer

GLG 792 Research. (1-12)

fall, spring, summer

GLG 799 Dissertation. (1-15)

fall, spring, summer

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

German

See "Languages and Literatures," page 253.

Gerontology

Interdisciplinary Certificate Program

www.west.asu.edu/chs/grn

602/543-6642

FAB S121

Richard Gitelson, Director

American Studies (ASU West)

Associate Professor: Hattenhauer

Anthropology (ASU Main)

Professor: Carr

Communication (ASU Main)

Professor: Arnold

Communication Studies (ASU West)

Professor: V. Waldron

Associate Professors: Di Mare, Kelley

Design (ASU Main)

Associate Professor: Cutler

Economics (ASU Main)

Professor: Hogan

Education (ASU West)

Associate Professor: Achilles

English (ASU Main)

Professor: Kehl

Exercise and Wellness (ASU East)

Associate Professors: Phillips, Swan

Geography (ASU Main)

Associate Professor: McHugh

Gerontology (ASU West)

Lecturer: K. Waldron

Health Administration and Policy (ASU Main)

Professor: Schneller

History (ASU Main)

Professor: Gratton

Kinesiology (ASU Main)

Regents' Professor: Landers

Professor: Stelmach

Assistant Professor: Etnier

Marketing (ASU Main)

Associate Professor: Stephens

Music (ASU Main)

Professor: Crowe

Assistant Professor: Rio

Nursing (ASU Main)

Professor: Komnenich
Associate Professors: Killeen, McCarthy

Nutrition (ASU East)

Professor: Vaughan
Assistant Professor: Woolf

Psychology (ASU Main)

Professors: Karoly, Okun, Reich, Sadalla, Zautra
Associate Professors: Alexander, Leshowitz

Psychology in Education (ASU Main)

Professor: Strom

Recreation and Tourism Management (ASU West)

Professors: Gitelson, Knopf, Searle

Social and Behavioral Sciences (ASU West)

Professors: McGovern, Nández
Associate Professor: Burlison
Assistant Professors: Anastasi, Carter

Social Work (ASU Main)

Assistant Professor: Kang

Social Work (ASU West)

Associate Professor: Fitzpatrick
Assistant Professors: Bushfield, McCabe
Lecturer: Ealy

Sociology (ASU Main)

Professors: Kronenfeld, Kulis
Associate Professors: Keith, Miller-Loessi, Sullivan

The Gerontology Program is a university-wide, multidisciplinary program designed so that students may take course work at any of the four ASU campuses and apply it toward the graduate Certificate in Gerontology. The program has an affiliated faculty of more than 50 members housed in 25 different departments throughout the university. Courses related to aging are taught by faculty who are active contributors to research, theory, and public policy and practice.

Program activities are designed for students who wish to study the psychological, sociological, biological, and policy-related aspects of aging, as well as for those interested in the health, economic, and social concerns of older people. Students study the aging process from multiple perspectives and develop knowledge and skills to prepare them for careers in an aging society. Students may also gain practical experience in working with older adults through field-based experiences and internships.

Since older Americans are becoming an increasing percentage of the population, there is a growing need for professionals with gerontology expertise. This is especially the case in Arizona due to the large number of retirement communities located here. Careers are available in a broad range of fields, including recreation, social work, nursing, counseling, public policy, and long-term care administration.

Certificate in Gerontology

An interdisciplinary, 21-semester-hour Certificate in Gerontology, administered by the Committee on Gerontology, is open to individuals with an earned baccalaureate degree. Students enrolled in the certificate program may simultaneously pursue a major in an academic unit offering a graduate degree or may enter the program as nondegree graduate students.

The course work is composed of six semester hours of required courses, a capstone experience, and 12 hours of aging-related elective courses chosen in consultation with an advisor. For more information on program requirements, contact the Gerontology Program office.

For more information, call 602/543-6642, or access the program Web site at www.west.asu.edu/chs/grn.

GERONTOLOGY (GRN)**ASU Main and West****W GRN 400 Perspectives on Aging. (3)**

selected semesters

Multidisciplinary introduction to the study of aging in individuals, families, and society. Cross-listed as W SOC 400. Credit is allowed for only W GRN 400 or W SOC 400.

W GRN 420 Health Aspects of Aging. (3)

spring

Examines biological, social, and behavioral aspects of health in the later years. Considers the organization and delivery of care.

M GRN 450 Biology of Aging. (3)

selected semesters

Examines normal biological aging and changes in functional capabilities in the elderly. Lecture, lab.

M GRN 530 Multidisciplinary Approaches to Gerontology. (3)

selected semesters

Examines literature that each discipline brings to the study of gerontology. Covers both theory and practice. Lecture, discussion.

M GRN 531 Caregiving. (3)

selected semesters

Examines theory and practice of caregiving for the senior population. Lecture, discussion.

M GRN 540 Aging and Wellness. (3)

selected semesters

One-on-one service/experiential learning with seniors from the community. Lecture, lab. Cross-listed as SWG 517. Credit is allowed for only GRN 540 or SWG 517.

M GRN 550 Biology of Aging. (3)

selected semesters

Examines normal biological aging and changes in functional capabilities in the elderly. Lecture, lab.

M GRN 560 Alzheimer's and Related Dementias. (3)

selected semesters

Familiarization with Alzheimer's disease and related dementias from a caregiver's perspective. Lecture, lab.

M/W GRN 584 Graduate Internship. (3-6)

fall, spring, summer

M/W GRN 590 Graduate Reading and Conference. (3)

fall, spring, summer

M/W GRN 591 Graduate Seminar. (1-6)

fall and spring

M/W GRN 598 Special Topics. (3)

selected semesters

Selected topics in gerontology.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Health Industry Leadership

Graduate Certificate Program

For information on the new Graduate Certificate in Health Industry Leadership, call the School of Health Management and Policy at 480/965-7778.

Health Sector Management

Master's Program

wpcarey.asu.edu/mba/ft_mhsm/mhsm_info.cfm

480/965-7778

BA 318

Jeffrey R. Wilson, Director

Professors: Baldwin, Johnson, Kirkman-Liff, Schneller

Assistant Professor: Rivers

Clinical Professor: Warne

Associate Research Professor: Schwenke

The faculty in the School of Health Administration and Policy, W. P. Carey School of Business, offer a graduate program leading to the Master of Health Sector Management. This degree is offered only in conjunction with the M.B.A.

MASTER OF HEALTH SECTOR MANAGEMENT

The M.B.A./M.H.S.M. is a concurrent degree program structured to prepare students to become managers and leaders in contemporary health-related industries and systems. The curriculum is designed to equip graduates with knowledge of the broad continuum of healthcare products and services, advanced managerial knowledge and analytical skills, as well as in-depth preparation in one of the four M.B.A. areas of study: financial management and markets, information management, services marketing and management, and supply chain management. Students graduate from this program prepared to assume advanced leadership roles in a wide range of settings, including biotechnology corporations, consulting firms, delivery systems, health financing, health information organizations, and pharmaceutical industry. This preparation consists of the core M.B.A. curriculum, a series of eight M.H.S.M. courses, a summer internship, and one of the M.B.A. areas of study.

Admission. Applications should be submitted online. For the general requirements, see "Admission to the Graduate College," page 85. Applicants are required to submit evi-

dence of their ability to pursue a graduate degree program in health services administration successfully. All students must take the GMAT. For more information, call 609/921-9000, or write

EDUCATIONAL TESTING SERVICE
ROSEDALE ROAD
PRINCETON NJ 08541-6108

Students must apply separately to the M.B.A. and M.H.S.M. degree programs. Applicants must submit two applications for admission and two copies of all transcripts directly to the Graduate College. Two recommendations commenting on the student's motivation, commitment, achievements, work experience, and opportunity for success in the program are required. The application includes the M.B.A. supplemental application, which contains a box that must be checked, indicating your interest in the M.H.S.M. degree program. In addition, applicants are required to submit a statement of personal objectives and a professional interest statement that reflects your interest in health-related industries and systems. Students should identify their preliminary interest in one of the four M.B.A. specialization areas. Because the M.B.A./M.H.S.M. program begins in early June, preference for admission and financial assistance is given to applicants applying by March 1. It is recommended that students visit the campus for a personal interview. In cases where this creates a hardship, a student may ask for a telephone interview with an M.H.S.M. faculty member when the application file is complete. Materials describing the M.H.S.M. are available by calling 480/965-7778, accessing the Web site at wpcarey.asu.edu/mba/asu_mba_day.cfm, or writing

SCHOOL OF HEALTH ADMINISTRATION AND
POLICY
W. P. CAREY SCHOOL OF BUSINESS
ARIZONA STATE UNIVERSITY
PO BOX 874506
TEMPE AZ 85287-4506

Program of Study. The program of study for the concurrent M.B.A./M.H.S.M. consists of a minimum of 72 semester hours. The total amount of semester hours a student is required to take is dependent upon his or her choice of M.B.A. specialization area.

Additional semester hours (prerequisites) may be required to strengthen preparation in a given specialty. Subject to availability, students may complete an optional residency/fellowship for a period of up to one year (following completion of the degree program).

Prerequisites. Students lacking sufficient background in business fundamentals are encouraged to take a basic financial accounting course. Those without a basic course in computer skills are required to complete CIS 200. Students must demonstrate strong quantitative ability. This may be accomplished by taking a calculus course (MAT 210).

Foreign Language Requirements. None.

Comprehensive Examination. All students must successfully complete the integrative seminar, which meets the

comprehensive requirement established by the W. P. Carey School and Graduate College for the M.H.S.M. degree.

Thesis Requirements. None.

HEALTH SECTOR MANAGEMENT (HSM)

HSM 502 Health Care Organization. (3)

once a year

Concepts, structures, functions, and values that characterize contemporary health care systems in the United States.

HSM 505 Managerial and Population Epidemiology. (3)

once a year

Quantitative tools to make health care management decisions, including biostatistics, epidemiology, and cost-effectiveness analysis. Prerequisite: HSM 561 or a course in basic statistics.

HSM 512 Health Care Economics. (3)

once a year

Economics of production and distribution of health care services, with special emphasis on the impact of regulation, competition, and economic incentives. Prerequisite: HSM 502.

HSM 520 Pharmaceutical, Biotechnology, and Medical Technology Industries. (3)

once a year

In-depth background on the pharmaceutical, biotechnology, and medical equipment industries. Negotiation of alliances among pharmaceutical and biotechnology firms and understanding of global health care markets. Prerequisite: HSM 502.

HSM 522 Health Sector Information and Knowledge Management. (3)

once a year

Information technology and knowledge management applications in the health sector, including care delivery and financing institutions and in the pharmaceutical and biotechnology industries. Prerequisites: HSM 505; QBA 502.

HSM 532 Financial Management of Health Services. (3)

once a year

Acquisition, allocation, and management of financial resources within the health care enterprise. Budgeting, cost analysis, financial planning, and internal controls. Prerequisites: ACC 503; FIN 502; HSM 502.

HSM 542 Health Care Jurisprudence. (3)

once a year

Legal aspects of health care delivery for hospital and health services administration. Legal responsibilities of the hospital administrator and staff. Prerequisites: HSM 505, 520.

HSM 560 Health Services Administration and Policy. (3)

fall and spring

Introduces organizational theory and management of complex organizations within the historical and contemporary contexts of the U.S. public health.

HSM 561 Biostatistics. (3)

fall

Aspects of descriptive statistics and statistical inference most relevant to health issues, including data, rates, and confidence intervals.

HSM 562 Health Care Organization and Systems. (3)

once a year

Functional relationships among managerial elements of health care institutions with major focus on hospital governance and policy dynamics.

HSM 563 Economics for Public Health Management. (3)

fall

Introduces concepts and methods used to direct and understand production and distribution of health care services.

HSM 564 Health Care Finance. (3)

once a year

Overview of the acquisition, allocation, and management of financial resources by health care providers. Focuses on economic, financial, and accounting principles.

HSM 565 Policy Issues in Health Care. (3)

once a year

Current policy issues in health through concepts of access, cost, and quality; issues relating to disease trends and policy formulation.

HSM 566 Basic Principles of Epidemiology. (3)

spring

Basic principles of epidemiology, evaluation of etiology, natural history, intervention therapy, and disease prevention. Lecture, lab. Prerequisite: Master of Public Health major or instructor approval.

HSM 573 Comparative Health Systems. (3)

once a year

Comparison of health care financing and delivery in industrialized countries; covers insurance, hospital management, and physician payment. Lecture, discussion.

HSM 575 Chronic Care Administration. (3)

selected semesters

Management of long-term care services and facilities, including behavioral health and rehabilitation programs.

HSM 589 Integrative Seminar. (3)

fall, spring, summer

Capstone assessment of current policies, problems, and controversies across the broad spectrum of health services administration. Prerequisites: HSM 505, 520, 522, 532.

HSM 591 Seminar. (1–12)

once a year

Topics may include the following:

- Behavioral Health. (3)
- Cost Containment and Quality Assurance. (3)
- Health Care Economic Outcomes. (3)
- Health Care Policy. (3)
- Managing Physicians. (3)
- Topics in Health Services Research. (3)

HSM 593 Applied Project. (3)

fall, spring, summer

Optional on-site experience in advanced development of managerial skills in health services administration and policy. Minimum of 10 weeks. Prerequisites: 18 hours of credit toward program of study; director approval.

HSM 598 Special Topics. (1–4)

once a year

Topics may include the following:

- Epidemiology. (3)

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Higher and Postsecondary Education

Master's and Doctoral Programs

coe.asu.edu/elps/highed.php

480/965-6357

ED 120

Gary R. Hanson, Academic Program Coordinator,
M.Ed. in Higher and Postsecondary Education

Caroline Turner, Academic Program Coordinator,
Ph.D., Ed.D. in Higher and Postsecondary Education

Professors: Fenske, Hanson, Turner, Valverde, Webb

Associate Professors: Hunnicutt, Rund, Wilkinson

Assistant Professor: Moses

Research Professor: de los Santos

The faculty in the Division of Educational Leadership and Policy Studies offer graduate programs leading to the Master of Education and Doctor of Education degrees in Higher and Postsecondary Education.

Candidates for the M.Ed. and Ed.D. programs may be required to take certain College of Education core courses, depending upon previous experience and education. Pre-approval by an advisor is required. The M.Ed. program requires 33 semester hours of course work, including a practicum. Candidates for all degrees must pass a written comprehensive examination, and candidates for the Ed.D. must also pass a final oral examination in defense of the dissertation.

Students interested in the Ph.D. degree with a field of study encompassing higher education should refer to "Educational Leadership and Policy Studies," page 193. See "Doctor of Philosophy," page 96, for information on the Ph.D. degree.

Admissions information and forms for this and other programs are available online.

MASTER OF EDUCATION

Applicants for admission to the M.Ed. degree program must submit scores on either the Graduate Record Examination (GRE) or the Miller Analogies Test; scores on the GRE are preferred. For more information, see "Master of Education," page 189.

DOCTOR OF EDUCATION

Applicants for admission to the Doctor of Education program must submit scores on the GRE. For more information, see "Doctor of Education," page 190.

HED 689 Leadership in Higher Education. (3)

fall

Theory and practice of leadership and administration in higher educa-

RESEARCH ACTIVITY

Faculty members in higher education are conducting research on a variety of significant topics according to their areas of special research interest. These areas include student access, retention of underrepresented students, student financial assistance, faculty development, organizational influences on the community college, Hispanic studies, legal aspects of higher education, assessment and program evaluation, faculty diversity, women of color and leadership in higher education, quality approaches to policy research, and policy analysis.

HIGHER AND POSTSECONDARY EDUCATION (HED)

HED 510 Introduction to Higher Education. (3)

fall

Overview of American higher education, including philosophical, political, and social aspects.

HED 527 Seminar: Student Affairs Administration. (3)

fall

Organizational models, administrative competencies and skills, and emerging challenges of student affairs administration. Lecture, discussion, group projects, written assignments.

HED 533 The Community-Junior College. (3)

fall and spring

History, functions, organization, and current issues. Meets Arizona community college course requirement for certification.

HED 602 Institutional Research/Strategic Planning. (3)

fall

Provides an overview of policy research and planning in higher education at the campus system and governing/coordinating agency levels. Lecture, group discussion, research projects. Prerequisite: HED 510.

HED 611 Curriculum and Instruction. (3)

spring

Curriculum development, instructional organization, and improvement of instruction in higher education. Prerequisite: HED 510.

HED 620 Diversity in Higher Education. (3)

spring

Overview of the demographic profile of college students, faculty, and staff. Addresses issues of access, retention, and development. Lecture, collaborative learning, group projects.

HED 644 Higher Education Finance and Budgeting. (3)

spring

Financial planning and budgeting in higher education institutions. Issues related to financing public and private colleges and universities. Prerequisite: HED 510.

HED 649 Law of Higher Education. (3)

fall

Analyzes legal issues related to higher education; examines key court decisions. Prerequisite: HED 510.

HED 679 The American College Student. (3)

spring

Overview of American college student from demographic, background characteristics, and values/attitudes/perspectives. Includes access, persistence, and degree completion. Lecture, group discussion, research projects.

HED 687 Governance, Coordination, and External Influences in Higher Education. (3)

spring in odd years

Study of governance and coordination in higher education systems and the impact of external forces on them. Lecture, discussion.

HED 688 Organizational Theory. (3)

spring

Major views of organizations and their influence on role definition and participant behaviors in educational organization. Seminar, discussion. Cross-listed as SPF 622. Credit is allowed for only HED 688 or SPF 622.

tion institutions.

HED 691 Seminar. (1–12)*selected semesters*

Topics may include the following:

- Approaches to Higher Education Policy Research
- Critical Policy Issues in Higher Education. (3)
- Cultural Diversity in Education. (3)
- Information Technology
- Qualitative Case Study
- Special Policy Issues. (3)

HED 799 Dissertation. (1–15)*selected semesters*

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 50.

History

Master’s and Doctoral Programs

www.asu.edu/clas/history/graduate/graduate.html

480/965-5778

COOR 4595

Noel J. Stowe, Chair

CORE FACULTY

Regents’ Professor: Iverson

Professors: Adelson, Batalden, Burg, Davis, Fuchs, Gratton, Green, Hirt, Lavrin, MacKinnon, Rosales, Simpson, Stowe, Tillman, Warnicke

Associate Professors: Barnes, Carroll, El Hamel, Gray, Gullett, Longley, Powers, Rush, Samuelson, Smith, Soergel, Stoner, Thompson, Thornton, VanderMeer, Warren-Findley, Wright

Assistant Professors: Holian, Kaplan, Koopmans, Manchester, Miller, Pitti, Wilson

Senior Instructional Professional: Luey

AFFILIATED FACULTY

Art

Associate Professor: Brown

Chicana and Chicano Studies

Associate Professor: Escobar

Humanities

Associate Professor: Taylor

Women’s Studies

Professor: Rothschild

The faculty in the Department of History offer graduate programs leading to the M.A. and Ph.D. degrees in History. M.A. candidates are offered an opportunity to develop knowledge of a specific historical field, to study comparative history, and to learn research techniques. Students with various goals benefit from this degree program, including those planning to advance to Ph.D. study, those seeking positions in the public sector, or in business, and those now

holding or looking for educational posts in elementary and secondary schools and community colleges.

Students admitted to the Master of Education (M.Ed.) degree program with a major in Secondary Education may elect history as the subject matter field.

MASTER OF ARTS

See “Master’s Degrees,” page 94, for general requirements.

Admission. Applications for the master’s program must be accompanied by the applicant’s scores on the Graduate Record Examination (GRE); three letters of recommendation from faculty members or others who are qualified to judge the applicant’s potential for advanced study in history; a résumé; a writing sample; and a statement of purpose.

Forms and instructions for filling them out are available from the graduate administrative assistant, the Graduate College Web site (www.asu.edu/graduate), and the Department of History Web site (www.asu.edu/clas/history). M.Ed. applicants must submit scores from both the GRE aptitude and advanced history tests. For M.Ed. program requirements, see “M.Ed. Degree in Secondary Education,” page 238.

All applications and supporting materials are reviewed by the graduate committee of the department. The committee recommends to the Graduate College that the student be granted regular or provisional admission or be denied admission.

Areas of Concentration. In consultation with the supervisory committee, the candidate may select a field of history from the following: Asian, British, European, Latin American, public history, United States, and U.S. Western. For information on the concentration in public history, see “Public History Concentration,” page 238. Under the United States concentration, students may choose to specialize in a variety of areas; some examples are African-American, American Indian, Chicana/Chicano, and women.

Program of Study

M.A. Degree in History. A minimum of 30 semester hours of graduate course work are required for the M.A. in History. Upon matriculation, the student, in consultation with the graduate director, selects a faculty advisor in the student’s area of concentration. The faculty advisor directs the student toward completion of required course work. The 30 semester hours must conform to the following guidelines:

1. At least 24 semester hours of course work in history is required. With the approval of the supervisory committee, candidates may add to the 24 semester hours, six semester hours of closely related course work in another academic unit (this does not apply to students in the public history concentration).
2. Eighteen of the 24 semester hours must be in 500-level history courses. If 400-level courses are included in the program of study, documented proof must be provided that they were taken for graduate

GRADUATE PROGRAMS AND COURSES

credit. Contact the graduate administrative assistant for details.

3. At least three of the 24 semester hours must be in HST 591 Seminar (in the major field of study).
4. At least six semester hours of HST 599 Thesis are required of students writing an M.A. thesis. The thesis equivalent substitutes six semester hours of HST 592 in place of six semester hours of HST 599 and incorporates an additional three semester hours of HST 591 into the program.

Public History Concentration. Candidates admitted to the M.A. degree in History with a concentration in public history select two areas of emphasis, one of which is public history, and must complete HST 502 and at least two short courses (of one semester hour each). Beyond these requirements, each of the six emphases within public history has other specific requirements, which are listed in the department's graduate handbook. The following is a list of the differing minimum number of semester hours for a degree in each of the six emphases: business, 41 semester hours; community history, 40; historic preservation, 40; historical administration, 37; historical editing and publishing, 44; public sector, 39. Course work taken outside of the department for inclusion in the program of study must be approved in advance by the appropriate program director.

M.Ed. Degree in Secondary Education. Candidates for the M.Ed. degree in Secondary Education with an emphasis in history must complete 15 semester hours of history course work. Overall, 12 of the 15 semester hours must be in 500-level history courses. If 400-level courses are included in the program of study, documented proof must be provided that they were taken for graduate credit. Contact the department for specific details. All candidates for the M.Ed. must maintain at least a 3.00 G.P.A. in HST courses.

Foreign Language Requirements. The student is expected to have a reading knowledge of one foreign language, but some other research skills may be substituted for this requirement by the supervisory committee.

Thesis Requirements. A master's thesis or its equivalent is required. Students have two options: They can either write an M.A. thesis or take the M.A. thesis equivalent. The M.A. thesis is approximately 100 pages in length and is based on original research. Students who choose this option must enroll for six semester hours of thesis work (HST 599).

The M.A. thesis equivalency is composed of two parts: (1) two three semester hour seminars (HST 591) on a broad topic and (2) two three semester hour research courses (HST 592) on a topic derived from the first research course.

Both the M.A. thesis and the M.A. thesis equivalent must be prepared according to Graduate College requirements, defended, and approved by a thesis committee. Candidates must supply bound copies of the thesis that will be placed in Hayden Library and in the Department of History.

Final Examination. A final oral defense of the thesis or the thesis equivalent is required.

DOCTOR OF PHILOSOPHY

The Ph.D. degree in History offers candidates the opportunity to study past and contemporary civilizations and to learn research and writing techniques that may be used in scholarly careers at leading academic institutions, in historical societies and agencies, in the public sector, and in business.

Major emphasis is placed upon developing a disciplined and inquiring mind, expertise in a chosen subject area, and competence in research methodology. The program is composed of small classes that bring students into a close working relationship with faculty and other students and offers flexibility in designing degree programs.

The five areas of concentration are Asian history, British history, European history, Latin American history, and United States history. Students must select a minimum of three historical fields for examination.

See "Doctor of Philosophy," page 96, for general requirements.

Admission. Applications for the Ph.D. degree in History must be accompanied by the applicant's scores on the Graduate Record Examination, three letters of recommendation from faculty members or others who are qualified to judge the applicant's potential for doctoral study, a writing sample, a résumé, and a statement of purpose. Applications and supporting materials are reviewed by the graduate committee of the Department of History. The committee recommends to the Graduate College that the applicant be granted regular or provisional admission or be denied admission.

Program of Study. For students admitted to the doctoral program with a master's degree or other graduate credits in hand, the requirements for the Ph.D. are an additional 54 semester hours of credit in residence, which should consist of 30 semester hours of historical study and 24 semester hours of dissertation research and writing. All 54 semester hours have to be taken after admission to the program. A minimum of 84 semester hours is required for the doctorate.

For students admitted to the doctoral program directly from a baccalaureate program, the requirements for the Ph.D. are 84 semester hours of course work, which should consist of 60 semester hours of historical study and 24 semester hours of dissertation research and writing. A minimum of 54 semester hours must be taken while the student is in residence after admission to the doctoral program. These hours should conform to the expectations of students who enter with a master's degree or other graduate credits in hand.

Upon matriculation, the student, in consultation with the graduate director, selects a faculty advisor in the area of concentration. Together the faculty advisor and student select a Ph.D. program committee consisting of at least three faculty members. In consultation with the student, the committee draws up the program of study and helps direct the student to the completion of required course work.

The program of study (a minimum of 60 graduate semester hours of history) required of all students in the doctoral program must conform to the following guidelines:

1. At least 36 semester hours must be at the 500-level or above;

2. If 400-level courses are taken as part of the program of study, the student must have documented proof that they were taken for graduate credit, contact the graduate administrative assistant for details;
3. At least nine semester hours must be in research seminars (HST 591); and
4. 24 semester hours of dissertation research and writing are required.

Foreign Language Requirements. Demonstration of a satisfactory reading knowledge of two foreign languages is required before the student may take the comprehensive examinations. For the second language, the student's program committee is free to approve the substitution of a demonstrated capacity in some other research skill, such as quantitative or statistical analysis, archival management, historical preservation, oral history, or educational technology.

Preliminary Reviews. During the first academic year of residence, students are required to schedule a preliminary review with their program committee. A preliminary review is an oral interview during which a student defends the program of study and his or her progress in the program to that point. Students who fail this review must withdraw from the program.

It is recommended that students make arrangements for the preliminary review by February 1 and have the preliminary review completed by March 1. It is further recommended that the student demonstrates a satisfactory reading knowledge of at least one foreign language before scheduling the review.

Comprehensive Examinations. Candidates for the doctoral degree must display a command of the historical knowledge in their chosen fields of study. This command is determined through a series of written and oral assessments known collectively as the comprehensive examinations. Comprehensive examinations are taken after the student has completed 60 semester hours of graduate course work. Students are allowed to retake the written portions of the comprehensive examination only once. Only upon successful completion of the written portions of the examination are students allowed to sit for the oral portion. The comprehensive examinations are conducted by the program committee.

Dissertation Committee. Upon satisfactory completion of the comprehensive examination, a supervisory committee for the dissertation is selected. In consultation with the director of Graduate Studies, the student chooses a chair of the dissertation committee. In consultation with the chair, the student then chooses two other faculty members to serve on the dissertation committee. The role of the committee is to approve the subject and title of the dissertation and to advise the candidate during the completion of the research and writing of the dissertation.

Dissertation Prospectus. Before a candidate is permitted to begin researching a dissertation topic, the candidate must prepare a prospectus of four to seven pages outlining the thesis. The prospectus presents the connection between the thesis and relevant historiography. The prospectus must be

presented to the dissertation committee by the end of the semester following the comprehensive exams. The topic must be in one of the candidate's fields of study and should include the following:

1. a thesis statement;
2. a discussion of relevant literature;
3. a discussion of possible research material and availability of sources;
4. a secondary bibliography; and
5. a historiographical statement.

Consult the graduate handbook for more information on the composition of a dissertation prospectus.

Dissertation Requirements. The dissertation must be an original contribution to knowledge and demonstrate the student's proficiency in independent research.

Final Examination. A final oral defense of the dissertation is required.

Graduate Preparation in Public History

The department offers several public history emphases preparing students to apply the skills of the historian in careers beyond the classroom. Public historians focus their historical insight, expertise, and critical abilities in the broad—that is, public—community. Six areas of emphasis are offered within public history: business applications, community history, scholarly publishing, historic preservation, historical administration, and the public sector. Graduate course work in public history may be included in both master's and doctoral programs of study.

The public history core combines specially designed course work and specific program requirements with traditional degree requirements. The department imposes additional admission requirements and includes periodic evaluations of public history students' progress. (The business applications emphasis requires prerequisites in the business field.) Enrollment is limited to provide careful preparation and advising. The curriculum integrates required course work in a public history component with courses in a geographic area concentration. As a special feature of the program, short courses are taught each year by visiting public historians. Each emphasis requires completion of two short courses. Courses from other disciplines, such as anthropology, business, public administration, fine arts, geography, political science, and architecture (architectural history and preservation planning) may be included in a program of study when students have the necessary prerequisites and if the courses meet particular student needs or are required within the various emphases of the concentration. Students who select the scholarly publishing option must be admitted to the Scholarly Publishing Certificate program and complete all certificate requirements. (See "Scholarly Publishing," page 319, for more information.)

Course work for all areas of the program *begins each fall semester with a required* special workshop during the fall orientation week before classes start. Students are admitted for the fall semester, though some class work outside the public history field may be started earlier. With concentrated full-time study, the master's public history component may

GRADUATE PROGRAMS AND COURSES

be completed in four semesters, depending on the public history area selected for emphasis. In some instances, the mandatory internship or other program requirements must be completed during the *summer* months.

Each student in the program completes a core of courses appropriate to an area of emphasis. Basic to each core is the completion of HIS 502 Public History Methodology during the first semester of study. The work introduced in this methodology class is continued in the public history research seminar (HIS 591), required or optional, depending on the area of emphasis.

At the satisfactory completion of the training work and upon the recommendation of the appropriate director and the department, a certificate of completion is issued by the department. Assistance is provided in job placement.

Students interested in this curriculum should consult the department's graduate handbook, which provides detail about public history work.

HISTORY (HST)

HST 405 Colonial American History to 1763. (3)

once a year

Political, economic, social, and cultural history of the colonial era. Concentrates on English colonies, with some consideration of Spanish, French, and other colonial regions in North America.

HST 406 The American Revolution, 1763–1789. (3)

once a year

Causes, course, and consequences of the American Revolution culminating in the ratification of the Constitution.

HST 407 The Early U.S. Republic, 1789–1850. (3)

once a year

Political, social, economic, and cultural development of the United States from the Revolution to 1850.

HST 408 Civil War and Reconstruction. (3)

once a year

Explores the causes, conduct, and consequences of the American Civil War, concentrating on the years 1848 to 1877.

HST 409 The Emergence of the Modern United States, 1877 to 1918. (3)

once a year

Triumph of modern political, social, and economic structures and values, 1877–1918; role of region, religion, race, and ethnicity.

HST 410 The Modern United States, 1918 to 1945. (3)

once a year

1920s boom and the crash, the Depression and the New Deal response. The Second World War at home and abroad.

HST 411 The Postwar United States, 1945 to 1973. (3)

once a year

Cold War, prosperity, reform, and immense social and political change in the U.S.

HST 412 The Contemporary United States, 1973 to the Present. (3)

once a year

End of the Cold War, political crises, and cultural transformations in the U.S.

HST 414 The Modern U.S. Economy. (3)

selected semesters

Origins of 19th-century slavery and industrialization; 20th-century crisis and regulation: political economy of an advanced capitalist democracy. Prerequisite: ECN 111 (or 112) or HST 109 (or 110).

HST 415 Unequal Sisters: Women and Political and Cultural Change. (3)

once a year

Examines race, ethnic, and class differences among women, focusing on the political and cultural experiences of women in the U.S.

HST 416 Indian History of the Southwest. (3)

once a year

Reviews historical events from prehistoric peoples, the Spanish and Mexican periods, and the U.S. period from 1846 to present.

HST 417 Topics in Mexican American History. (3)

once a year

Focuses on specific topics in Mexican American history, including immigration, civil rights, the Chicano Movement, union activism, and regional and generational differences.

HST 423 The Tudor Monarchy. (3)

once a year

Political, cultural, and social foundations of 16th-century England.

HST 424 The Stuart Transformation of England. (3)

once a year

Political, social, economic, and cultural developments in 17th-century England.

HST 426 The British Empire. (3)

once a year

British imperialism and colonialism in Africa, the Americas, Asia, and the South Pacific. Prerequisite: upper-division standing or instructor approval.

HST 427 The French Revolution and the Napoleonic Era. (3)

once a year

Conditions in Pre-Revolutionary and Revolutionary France; organization of France under Napoleon and impact of French changes upon Europe.

HST 428 Modern France. (3)

selected semesters

Social, political, economic, and cultural transformations of French society, 1815–present. Impact of industrialization, war, and revolution on people's lives. Prerequisite: upper-division standing or instructor approval.

HST 429 Modern Germany. (3)

once a year

Germany since 1871.

HST 430 Hitler: Man and Legend. (3)

once a year

Biographical approach to the German Third Reich emphasizing nature of Nazi regime, sociocultural issues, World War II, and historiography.

HST 431 Eastern Europe and the Balkans Before 1914. (3)

selected semesters

Empire and nation in Eastern Europe and the Balkans before World War I, emphasizing Hapsburg and Ottoman lands.

HST 432 Eastern Europe and the Balkans in the 20th Century. (3)

selected semesters

Politics and culture in Eastern Europe and the Balkans from World War I to the present.

HST 435 The Russian Empire. (3)

fall

Development of Russian imperial institutions and civil society from the 17th to the early 20th centuries. Lecture, discussion.

HST 436 The Soviet Experiment. (3)

spring

Communist revolutionaries' rule of Russia, focusing on utopian culture, Stalinist terror, heroism in war, and the breakup of the former USSR.

HST 437 Spain Through the Golden Age. (3)

selected semesters

Cultural, economic, political, and social development of Spain from antiquity to the late 17th century.

HST 438 Modern Spain. (3)

selected semesters

Cultural, economic, political, and social development of modern Spain.

HST 443 The United States and Latin America. (3)

once a year

Latin American struggle for diplomatic recognition, attempts at political union, participation in international organizations since 1810, and relations between the United States and Latin America.

HST 445 20th-Century Cuba. (3)*once a year*

History of Cuba from colonial era to formation of the early republic; political, economic, social development in late 20th century. Lecture, discussion.

HST 446 Colonial Mexico. (3)*once a year*

Political, economic, social, and cultural developments from pre-Columbian times to 1810.

HST 447 Modern Mexico. (3)*once a year*

Political, economic, social, and cultural developments from 1810 to the present.

HST 451 Chinese Cultural History. (3)*selected semesters*

China's classics in translation studied both for their intrinsic ideas and for the origins of Chinese thought.

HST 452 Chinese Cultural History. (3)*selected semesters*

Evolution of Confucian thought, its synthesis with Taoism and Buddhism, and modern reactions against, and uses of, Confucian traditions.

HST 453 The People's Republic of China. (3)*selected semesters*

Analyzes major political, social, economic, and intellectual trends in China since the founding of the People's Republic in 1949.

HST 455 The United States and Japan. (3)*fall*

Cultural, political, and economic relations in the 19th and 20th centuries. Emphasizes post-World War II period.

HST 456 The Vietnam War. (3)*once a year*

Intersection of American and Asian histories in Vietnam, viewed from as many sides as possible.

HST 460 History of Fire. (3)*fall*

Global survey of the natural and cultural history of fire. Lecture, discussion.

HST 480 Methods of Teaching History: Classroom Resources. (3)*fall*

Methods in instruction, organization, and presentation of the subject matter of history and closely allied fields. Prerequisites: HST 300; ITC admission. Pre- or corequisites: SED 403, 598.

HST 481 Methods of Teaching History: Community Resources. (3)*spring*

Identify community-based resources for teaching history, work with resources, and learn how to integrate them into the secondary classroom. Lecture, lab. Prerequisite: HST 480.

HST 484 Internship. (1–6)*selected semesters***HST 492 Honors Directed Study. (1–6)***selected semesters***HST 493 Honors Thesis. (3)***selected semesters***HST 494 Special Topics. (1–4)***selected semesters***HST 498 History Pro-Seminar. (3)***fall and spring*

Required course for majors on topic selected by instructor; writing-intensive course related to the development of research skills and writing tools used by historians. Prerequisites: HST 300; History major.

HST 499 Individualized Instruction. (1–3)*selected semesters***HST 500 Methods of Historical Investigation. (1–12)***selected semesters***HST 502 Public History Methodology. (3)***fall*

Introduces historical research methodologies, techniques, and strategies used by public historians. Readings, short papers, and guest speakers. Required for students in the public history concentration.

HST 512 Western Civilization to the Enlightenment. (3)*fall*

Systematically examines various interpretations of Western civilization from the ancient Middle Eastern civilizations to the European Enlightenment. Seminar.

HST 513 Western Civilization Since the French Revolution. (3)*selected semesters*

Systematically examines various interpretations of Western civilization since the French Revolution. Seminar.

HST 514 Historians of the United States. (3)*selected semesters*

Study of the history of American historical writing from the early colonial days to the 20th century.

HST 515 Studies in Historiography. (3)*selected semesters*

Methods and theories of writers of history. May be repeated for credit.

HST 525 Historical Resource Management. (3)*fall*

Identification, documentation, and interpretation of historic period buildings, sites, and districts. Emphasis on interdisciplinary efforts among historians, architects, and anthropologists.

HST 526 Historians and Preservation. (3)*spring*

Preparation of historians for public and private historic preservation programs. Prerequisite: HST 525 or instructor approval.

HST 527 Historical Administration. (3)*fall*

Preparation of historians in administration of archives and historical sites, museums, societies, and offices in government agencies.

HST 532 Community History. (3)*selected semesters*

Techniques and methods of community history emphasizing local resources. Required for community history option. Seminar.

HST 551 Comparative Histories of War and Revolution. (3)*selected semesters*

Comparative field course of the themes of war and revolution.

HST 552 Comparative History of Family and Community. (3)*selected semesters*

Comparative course with a focus on family, including minority and ethnic groups, in society.

HST 553 Comparative History of State and Institutions. (3)*selected semesters*

Comparative course that explores the changing nature of central institutions and government.

HST 554 Comparative Historical Population Studies: Ethnicity, Economy, and Migration. (3)*selected semesters*

Comparative course that explores the impact of social, cultural, or economic changes in the population.

HST 555 Comparative Historical Topics. (3)*selected semesters*

Analyzes a variety of specific social, political, cultural, and intellectual topics.

HST 584 Internship. (1–12)*selected semesters***HST 590 Reading and Conference. (1–12)***selected semesters***HST 591 Seminar. (3)***fall and spring*

May be repeated for credit.

HST 592 Research. (1–12)*selected semesters***HST 595 Continuing Registration. (1)***selected semesters***HST 598 Special Topics. (1–4)***selected semesters*

Reading courses designed to increase familiarity with a particular topic and the important writing concerning it. May be repeated for credit. Topics may include the following:

- Asian History. (3)
- English and British History. (3)
- European History. (3)

GRADUATE PROGRAMS AND COURSES

- Latin American History. (3)
- U.S. History. (3)

HST 599 Thesis. (1–12)
selected semesters

HST 684 Internship. (1–12)
selected semesters

HST 690 Reading and Conference. (1–12)
selected semesters

HST 695 Continuing Registration. (1)
selected semesters

HST 700 Public History Research Methods. (1–12)
selected semesters

HST 790 Reading and Conference. (1–12)
selected semesters

HST 791 Seminar. (1–12)
selected semesters

HST 792 Research. (1–12)
selected semesters

HST 795 Continuing Registration. (1)
selected semesters

HST 799 Dissertation. (1–15)
selected semesters

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 50.

History and Theory of Art

See “Ph.D. in History and Theory of Art,” page 123.

Humanities

Interdisciplinary Master’s Program

www.asu.edu/clas/humanities

480/965-6747

LL 641

Peter Lehman, Director

Humanities

Professors: Kugelmass, Lehman

Associate Professors: Baker, Privateer, Taylor

Assistant Professors: Duncan, Lund, Romeyn

Languages and Literatures

Regents’ Professor: Foster

The Graduate Committee on Humanities offers an interdisciplinary program leading to the M.A. degree in Humanities. One of the unique features of this interdisciplinary program is that, because it uses faculty research/teaching interests from a number of disciplines, a student may tailor a course of study to fit individual needs and goals. The committee is chaired by Humanities core faculty and may

include members from several departments. At the same time, the individualized program is balanced by a required core of several courses emphasizing interdisciplinary methodology and theory. Faculty and courses are not limited, however, to the departments and schools listed, since it is understood that many fields may be approached from a humanistic perspective.

MASTER OF ARTS

Among the small number of humanities M.A. programs in the U.S., the ASU program stands out in terms of its substance and breadth. The core of the curriculum, a sequence of three required courses, provides students with an introduction to an extremely wide range of classical and contemporary cultural theory. At the same time, the large number of elective classes at their disposal permits students to fashion a specialized field for themselves, typically combining work in two or more of the traditional humanities disciplines. The thesis—the capstone of the requirements for the degree—gives students the opportunity to make an original and substantial contribution to scholarship in their chosen field. This combination—a solid grounding in cultural theory, interdisciplinary specialization, and advanced research and writing—makes this M.A. program unique among its peers.

Admission. Students who fulfill the general requirements of the Graduate College and who have a B.A. in any of the humanities disciplines listed by the National Endowment for the Humanities are invited to apply. This invitation, however, does not preclude students who have bachelor’s degrees in the social and natural sciences. In addition to meeting Graduate College requirements, students must submit Graduate Record Examination scores; a writing sample; three letters of academic recommendation; and a brief letter of intent, outlining their academic career to date and plans for the future, at ASU and beyond. Prospective students should apply by March 1 for admission into the program the following fall. Students whose applications are complete by the March 1 deadline are notified of their admission status by April 15. Qualified students applying after March 1 are admitted depending on the availability of space.

Program of Study. M.A. students must complete a minimum of 30 hours of course work, including six hours of thesis preparation. In most cases, this involves a two-year program of study, focused on the following requirements: *Core Courses.* Students take a sequence of three core courses, one in each of their first three semesters. Contact an advisor for details.

Area of Study. Beyond the core courses, students use their remaining electives to develop a specific area of study, whose ultimate expression is the thesis, but which is also grounded in course work. The areas of study sponsored by the faculty include, but are not limited to American studies; art and society; classical studies; comparative literatures and cultures; film and media studies; gender and sexuality; intellectual history and philosophy; Jewish studies; performance studies; post-colonial studies; science, technology, and culture.

Foreign Language Exam. M.A. students are required to pass a foreign language reading examination during the first three semesters.

Master's Thesis. The centerpiece of the master's degree is a written thesis that makes an original and substantial contribution to scholarship in the humanities. Most students are expected to work toward a thesis proposal and the formation of a thesis committee (consisting of a chair drawn from the Humanities faculty and two other members) during their first two semesters; to finalize their committee and receive its approval of their proposal in their third semester; and to complete the thesis in the fourth semester. A final oral defense of the thesis is required.

Faculty Research Interests. Social and intellectual history; film studies; media studies; cultural studies; Latin America; queer theory; gender studies; subaltern studies; ideological approaches to literature; comparative literature; postcolonial studies; classical culture; East European and American Jews; Israel; urban studies; humor; technology and culture; intercultural perceptions; European imperialism and colonialism; American studies; Southeast Asian art history; critical theory; cultural anthropology; culture and organizational theory.

HUMANITIES (HUM)

HUM 420 Interpreting Latin America. (3)

spring

Introduces protocols and methodologies for cultural interpretation of Latin America, with emphasis on four principal cities as cultural space.

HUM 440 Los Angeles and Cultural Theory. (3)

spring

Analyzes representations of Los Angeles in literary, film, and musical texts and broader implications for contemporary American society.

HUM 450 Technology and Culture. (3)

spring

Explores sociocultural, ideological, and postmodern implications of technology and the role technology plays in social constructions as well as the spaces it creates. Seminar, discussion.

HUM 462 Psychoanalysis and Culture. (3)

fall

Introduces intellectual history of psychoanalytic movement of the 20th century and its contribution to humanities disciplines.

HUM 465 Narrative in the Human Sciences. (3)

fall

Theories of narrative and narrativity in the humanities, concentrating on the problems of specific disciplines and interdisciplinary solutions.

HUM 501 Introduction to Cultural Theory. (3)

fall

Selective history of cultural theory. Major figures and topics include Marx, Nietzsche, Freud, phenomenology, western Marxism, structuralism, and post-structuralism. Seminar.

HUM 502 Writing Cultures. (3)

spring

Theories and methods of representing Western and non-Western cultures in literature, history, ethnography, and pictorial media.

HUM 503 Research and Writing in the Humanities. (3)

fall

Systematic training in humanistic research and writing with particular attention to the interdisciplinary study of culture. Seminar.

HUM 511 Structures of Knowledge. (3)

fall

Theories and examples of structures of knowledge, including such topics as metaphor, semiotics, and knowledge of the "other."

HUM 513 Interpretation of Cultures. (3)

once a year

Methodologies and comparative theories for the study of relationships between various aspects of culture, the history of ideas, and the arts. May be repeated for a total of 6 semester hours when topics vary.

HUM 591 Seminar. (1–12)

once a year

Topics may include the following:

- Cultural Productions. (3)
- Theory and Culture. (3)
- Tragedy: Meaning and Form. (3)

HUM 598 Special Topics in the Humanities. (1–4)

selected semesters

Open to all students. Topics may include the following:

- Comparative Fine and Performing Arts. (3)
- Cultures of Ethnic Minorities. (3)
- Film and Media Studies. (3)
- Film Theory and Criticism
Fee.
- Non-Western Cultures. (3)
- Sexuality in the Media
Fee.
- Western Historical or Contemporary Cultures. (3)

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 50.

Indian Law

Certificate Program

The Certificate in Indian Law is available only to students in the College of Law. For more information, see "College of Law," page 73.