
East College

www.east.asu.edu/ecollege

Glenn W. Irvin, PhD, Dean

PURPOSE

East College offers a variety of liberal and professional programs. Baccalaureate programs are offered in applied biological sciences, applied psychology, business administration, education, exercise and wellness, human health studies, interdisciplinary studies, multimedia writing and technical communication, and nutrition. Minors, certificates, and graduate programs are available in some areas.

Each semester, East College offers a selection of popular upper-division ASU General Studies and general interest courses. While designed primarily to support East campus students, these courses are open to all ASU students who might find the times and location convenient. East College typically offers courses in anthropology, art, communication, economics, English, history, mathematics, music, philosophy, political science, psychology, religious studies, sociology, and women's studies. Students should refer to the current *Schedule of Classes* for specific courses offered at East campus each semester. All credit earned at East campus automatically transfers to Tempe campus or West campus.

Students who begin their college careers at East campus benefit from the small, residential campus environment. If they are uncertain about a major they can declare exploratory/undeclared status. Students are able to complete General Studies requirements and search for an ASU major that serves their personal and career objectives while enrolled as exploratory/undeclared majors. East College provides advising to exploratory/undeclared majors.

East College also offers statistics courses (APM) to meet requirements for a range of majors and support courses for the Bachelor of Applied Science (BAS) degree. The applied science core (ASC) courses are upper division and designed to build upon the mathematics and science base acquired in the Associate of Applied Science (AAS) degree.

APPLIED MATHEMATICS (APM)

APM 301 Introductory Statistics. (3)

selected semesters

Probability, distributions, statistical hypothesis testing, t-tests, basic correlation, and regression. Prerequisite: MAT 117 or instructor approval.

General Studies: CS

APM 401 Intermediate Statistics. (3)

selected semesters

Analysis of variance, multiple comparisons, multiple regression. Prerequisite: APM 301 (or its equivalent) or instructor approval.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 63.

APPLIED SCIENCE CORE (ASC)

ASC 301 Contextual Uses of Algebra in Technology. (1)

fall and spring

Uses algebra to solve real-world technological problems using currently available computer software. Prerequisite: BAS major.

ASC 302 Contextual Uses of Geometry in Technology. (1)

fall and spring

Uses geometrical concepts to solve real-world technological problems using currently available computer software. Prerequisite: BAS major.

ASC 303 Contextual Uses of Trigonometry in Technology. (1)

fall and spring

Uses trigonometry to solve real-world technological problems using currently available computer software. Prerequisite: BAS major.

ASC 315 Numeracy in Technology. (3)

fall and spring

Contextual uses of mathematics in applied sciences. Emphasizes using mathematical methodologies to solve technology-related problems. Prerequisite: BAS major.

General Studies: MA

ASC 325 Physical Sciences in Technology. (4)

fall and spring

Physical systems and their interrelationships on technology systems. Real-world applications of physical systems. Lecture, lab.

Prerequisite: BAS major.

General Studies: SQ

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 63.

Partnership in Baccalaureate Education. The Partnership in Baccalaureate Education, an agreement between Chandler-Gilbert Community College and East campus, is coordinated through East College. Through this partnership, East campus students take first-year composition courses and courses that meet lower-division ASU General Studies requirements. They are listed in "General Studies," page 92. These courses, combined with introductory courses within the major, are available in an innovative and integrated first-year curriculum designed to foster academic success. Students can also take major prerequisite courses, introductory language courses, and other lower-division courses of general interest through the partnership. These courses automatically transfer to ASU each semester.

DEGREE PROGRAMS

See the "East College Baccalaureate Degrees and Majors" table, page 540. For graduate degrees, see the "East College Graduate Degrees and Majors" table, page 541.

East College also offers certificate programs in Multimedia Writing and Technical Communication and in Spa Management; minors in Applied Biological Sciences, Applied Psychology, Food and Nutrition Management, Human Nutrition, Small Business, and Wellness Foundations; and concentrations for the BAS. See the *Graduate Catalog* for more information about graduate programs.

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See "General Studies," page 92.

East College Baccalaureate Degrees and Majors

Major	Degree	Concentration*	Administered By
Applied Biological Sciences	BS	Applied biological sciences, applied biological sciences/secondary education, ecological restoration, urban horticulture, or wildlife habitat management	Department of Applied Biological Sciences
Applied Psychology	BS	—	East College
Applied Science	BAS	Food service management, multimedia writing and technical communication, or wellness	East College
Business Administration	BS	—	East College
Elementary Education	BAE	—	East College
Exercise and Wellness	BS	Exercise and wellness or health promotion	Department of Exercise and Wellness
Human Health Studies	BA, BS	—	East College
Interdisciplinary Studies	BIS	See the “BIS Concentrations” table, page 126.	Bachelor of Interdisciplinary Studies Advisory Committee
Multimedia Writing and Technical Communication	BS	—	East College
Nursing	BSN	—	College of Nursing (Tempe campus)
Nutrition	BS	Dietetics, food and nutrition management, human nutrition, or nutrition communication	Department of Nutrition
Real Estate	BS	—	East College
Secondary Education	BAE	Academic specialization: physical education	East College

* If a major offers concentrations, one must be selected unless noted as *optional*.

INTERDISCIPLINARY STUDIES—BIS

The Bachelor of Interdisciplinary Studies (BIS) program is intended for the student who has academic interests that might not be satisfied with existing majors. Building on academic concentrations and an interdisciplinary core, students in the BIS program take an active role in creating their educational plans and defining their career goals. The BIS program emphasizes written communication, versatility, and critical thinking, skills desired in the 21st-century workplace. Self-assessment and appraisal of opportunities to support academic and career goals are key elements in the core courses. The concentrations are generally based on approved academic minors, certificate programs, or special coherent clusters of course work. The student should be able to integrate these into a meaningful program.

The combination of areas of concentration gives students flexibility in creating unique programs to accomplish individual academic goals. Students who declare the BIS as their major in East College at East campus take their core courses and at least one concentration through East campus. The second concentration may be taken at the Tempe campus or East campus. The BIS core courses are offered by East College. Concentrations at East campus are offered by East College, the College of Technology and Applied Sciences, and the Morrison School of Agribusiness and Resource Management. Students interested in the BIS program should arrange an appointment with an East College advisor at 480/727-1333 before declaring the BIS major.

Basic Requirements

The BIS major requires 120 semester hours. The major is composed of a 12 hour core and a minimum of 36 hours in two or three concentration areas (18 hours or more each). Throughout the core sequence, the student assembles a portfolio, including self-assessment of progress toward career goals and an evaluation of key educational and personal activities that may apply. The core courses must be taken in sequence. These courses may not be transferred from other institutions. BIS 401 may be taken as a corequisite or prerequisite for BIS 402. All core courses must be completed with a grade of “C” (2.00) or higher.

Core Courses

BIS 301 Foundations of Interdisciplinary Studies L.....	3
BIS 302 Interdisciplinary Inquiry	3
BIS 401 Applied Interdisciplinary Studies	3
BIS 402 Senior Seminar L.....	3
Total	12

For course descriptions, see “Bachelor of Interdisciplinary Studies,” page 125.

Other Requirements

In addition to the basic requirements, students must complete all university requirements, including First-Year Composition and General Studies. Early advising is recommended to ensure that students meet requirements efficiently and optimize their choices.

East College Graduate Degrees and Majors

Major	Degree	Concentration ¹	Administered By
Applied Biological Sciences	MS	GIS/remote sensing, natural resource management, or range ecology	Department of Applied Biological Sciences
Applied Psychology	MS	—	Faculty of Applied Psychology
Curriculum and Instruction	MEd	English as a second language, instructional media in K–12 schools, or professional studies	Faculty of Education
	PhD ²	Exercise and wellness education	Division of Curriculum and Instruction (Tempe Campus)
Environmental Design and Planning ²	PhD	Design; history, theory and criticism; or planning	Committee on Environmental Design and Planning
Exercise and Wellness	MS	—	Department of Exercise and Wellness
Nutrition	MS	—	Department of Nutrition
Physical Education	MPE	—	Faculty of Education
Plant Biology ²	PhD	—	School of Life Sciences (Tempe campus)

¹ If a major offers concentrations, one must be selected unless noted as *optional*.

² Doctoral courses for this interdisciplinary program administered by the Tempe campus are offered at the East campus.

Declaring the BIS Major

Students must receive approval from an East College advisor before declaring the BIS major. In addition, the student must

1. complete at least 45 semester hours of university credit;
2. earn a cumulative G.P.A. of at least 2.00;
3. complete two courses in each concentration with a minimum grade of “C” (2.00) before enrolling in BIS 301; and
4. complete the university mathematics and First-Year Composition requirements.

All incoming students and continuing students with a minimum GPA of 2.00 who do not meet the above requirements are placed in a pre-BIS major until the requirements have been met.

Approved Concentrations

Each concentration requires 18 or more semester hours, with each course completed with a grade of “C” (2.00) or higher. Twelve or more of the semester hours must be in upper-division courses. Students should check for new information about concentrations on the Web at www.east.asu.edu/ecollege or contact an East College advisor at 480/727-1333.

Department of Applied Biological Sciences

www.east.asu.edu/ecollege/appliedbiologicalsciences

480/727-1444

WANNER, Third Floor

Ward W. Brady, Chair

Professors: Brady, Brock, Mushkatel, Ohmart, Sommerfeld, Stutz

Associate Professors: Green, Martin, Miller, Slater, Steele, Whysong

Assistant Professors: Hu, Marcum

Lecturer: Huffman

APPLIED BIOLOGICAL SCIENCES—BS

Programs offered by the Department of Applied Biological Sciences integrate applied research in the biological sciences with education and service to the community. Faculty strive to be at the forefront of their chosen academic disciplines; they combine classroom teaching, student advising, research, and practical problem solving. The aim is to provide the best possible education to the next generation of biological practitioners and scientists through mentors who

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See “General Studies,” page 92.

themselves understand the science, the means by which it advances, and the manner in which it can be brought to bear on practical problems. The educational goal is to offer students rigorous and practical programs in applications of the biological sciences that feature current technologies as well as an understanding of the policy context in which biologists work. Consistent with a polytechnic vision, programs involve extensive student interaction with the faculty through experience based learning activities such as laboratories, field trips, internships, and faculty guided research and service learning projects. Faculty are committed to the advancement of knowledge in their chosen fields of study and work closely with graduate students in the Master of Science degree program. Graduate students gain practical experience in the practice of research leading to a solid foundation for scholarly research. The Department of Applied Biological Sciences is also committed to providing service to the community outside the university. Because of the variety of career options available in this field, one general and four focused concentrations are offered:

1. applied biological sciences;
2. applied biological sciences/secondary education;
3. ecological restoration;
4. urban horticulture; and
5. wildlife habitat management.

Applied Biological Sciences graduates can pursue entry-level careers in biological research, education, and applied sciences such as ecological restoration, urban horticulture, and wildlife biology. The Applied Biological Sciences major also prepares students for graduate school and professional schools in disciplines such as medicine, dentistry, physical therapy, ecology, horticulture, and wildlife biology. For the latest information about program requirements and courses, access the Web site at www.east.asu.edu/ecollege/appliedbiologicalsciences, or call 480/727-1444.

Graduation Requirements

A total of 120 semester hours, with a minimum of 45 semester hours of upper-division credit, is required for graduation. As part of the undergraduate degree program, students complete the ASU General Studies requirement. For courses that meet ASU General Studies requirement, see "General Studies," page 92. It is strongly recommended that students work with an East College academic advisor when selecting courses to meet the General Studies requirement since otherwise required courses can often be used to meet the General Studies requirement.

Applied Biological Sciences Core. All Applied Biological Sciences students are required to complete the following courses:

Applied Biological Sciences Core	
ABS 300 Environmental Biology.....	3
ABS 301 Technology and Biology.....	2
ABS 302 Policy and Biology.....	2
ABS 311 Applied Cellular Biology.....	3
or ABS 312 Structure and Function (4)	
ABS 350 Applied Statistics or equivalent CS.....	3
BIO 187 General Biology I <i>SG</i>	4
BIO 188 General Biology II <i>SQ</i>	4
BIO 340 General Genetics.....	4

BIO 360 Animal Physiology.....	3
or PLB 308 Plant Physiology (4)	
MAT 210 Brief Calculus <i>MA</i>	3
Total	31–33

Students majoring in Applied Biological Sciences must select one of the concentrations listed below.

Applied Biological Sciences Concentration

This concentration provides maximum flexibility for students seeking careers in the biological sciences. The Applied Biological Sciences core provides a foundation in the biological sciences; required courses in chemistry and physics complete the general science requirements. Students intending to pursue research careers in biology and postgraduate studies may find this concentration appropriate. In addition, the concentration is designed for students planning to enter professional programs in the health care professions such as medicine, medical technology, epidemiology, dentistry, optometry, pharmacy, physical therapy, podiatry, public health, and physician's assistant programs. Students planning to enter professional programs need to include two semester sequences in physics and organic chemistry in their programs of study. BCH 361 Principles of Biochemistry is also suggested.

Applied Biological Sciences Concentration

ABS 355 Vertebrate Zoology.....	4
ABS 370 Ecology.....	3
ABS 490 Applied Biological Sciences Seminar.....	1
CHM 113 General Chemistry <i>SQ</i>	4
CHM 116 General Chemistry <i>SQ</i>	4
Choose between the organic chemistry course combinations below.....	4 or 8
CHM 231 Elementary Organic Chemistry <i>SQ</i> ¹ (3)	
CHM 235 Elementary Organic Chemistry Laboratory <i>SQ</i> ¹ (1)	
— or —	
CHM 331 General Organic Chemistry (3)	
CHM 332 General Organic Chemistry (3)	
CHM 335 General Organic Chemistry Laboratory (1)	
CHM 336 General Organic Chemistry Laboratory (1)	
Choose between the physics course combinations below.....	4 or 8
PHY 101 Introduction to Physics <i>SQ</i> (4)	
— or —	
PHY 111 General Physics <i>SQ</i> ² (3)	
PHY 112 General Physics <i>SQ</i> ³ (3)	
PHY 113 General Physics Laboratory <i>SQ</i> ² (1)	
PHY 114 General Physics Laboratory <i>SQ</i> ³ (1)	
Approved electives in biology and science.....	12
Total	36–44

¹ Both CHM 231 and 235 must be taken to secure SQ credit.

² Both PHY 111 and 113 must be taken to secure SQ credit.

³ Both PHY 112 and 114 must be taken to secure SQ credit.

Applied Biological Sciences/Secondary Education Concentration

The applied biological sciences/secondary education concentration qualifies students for the State of Arizona Certification in Secondary Biology Education. Students interested in pursuing this concentration need to complete the science content courses related to biology and the courses specific to the secondary education curriculum. The program concludes with full-time student teaching in a secondary

science classroom. Students interested in pursuing the concentration need to be admitted into the Teacher Education unit before taking the secondary methods courses (approximately during the junior year). See “Applied Biological Sciences–BS Secondary Education Concentration,” page 552, for application requirements.

Secondary Education Concentration General Studies Requirement.

For students choosing the secondary education concentration, the following courses must be used as General Studies courses in order to graduate in 120 hours:

ABS 350 Applied Statistics or equivalent <i>CS</i>	3
BIO 187 General Biology I <i>SG</i>	4
BIO 188 General Biology II <i>SQ</i>	4
MAT 210 Brief Calculus <i>MA</i>	3

Applied Biological Sciences/Secondary Education Concentration

ABS 355 Vertebrate Zoology.....	4
or ABS 207 Applied Plant Taxonomy (3)	
ABS 370 Ecology.....	3
ABS 490 Applied Biological Sciences Seminar.....	1
CHM 113 General Chemistry <i>SQ</i>	4
CHM 116 General Chemistry <i>SQ</i>	4
MIC 205 Microbiology <i>SG*</i>	3
MIC 206 Microbiology Laboratory <i>SG*</i>	1
PHY 101 Introduction to Physics <i>SQ</i>	4
Upper-division electives.....	2
Total.....	25–26

* Both MIC 205 and 206 must be taken to secure SG credit.

Secondary Education Curricula

BIO 480 Methods of Teaching Biology.....	3
BIO 482 Advanced Methods of Teaching Biology.....	3
EDC 350 Educational Technology I: Applications.....	1
EDC 351 Educational Technology II: Instruction and Evaluation.....	1
EDC 352 Educational Technology III: Design.....	1
EDC 494 ST: Professional Knowledge.....	2
EDP 303 Human Development <i>L</i>	3
EDP 310 Educational Psychology for Non-Teachers <i>SB</i>	3
RDG 301 Literacy and Instruction in the Content Areas.....	3
SED 403 Middle and Secondary School Principles, Curricula, and Methods.....	3
SED 478 Student Teaching in Secondary Schools.....	10–12
SED 496 Field Experience.....	0
SPE 394 ST: Inclusion Practices at the Secondary Level.....	3
Total.....	36–38

Strongly Recommended

MCE 446 Understanding the Culturally Diverse Child <i>C</i>	3
SPE 311 Orientation to Education of Exceptional Children <i>SB, C</i>	3

Ecological Restoration Concentration

The discipline of ecological restoration provides a scientific basis for the reconstruction of damaged and degraded ecosystems. It focuses on management practices designed to improve the ecological structure and function of these ecosystems. These practices may involve all ecosystem components, including soils, water, vegetation, and wildlife. The actual restoration process includes identifying the causes of degradation, devising goals and methods for the restoration effort, developing management strategies for the restored

sites, and monitoring and assessing restoration success. Restoration activities may include reintroducing plants or animals, removal of invasive species, rebuilding soils, and returning natural processes such as fire and flooding to ecosystems that historically experienced these disturbance regimes. The goals of restoration are to restore ecological integrity and to meet societal needs for sustainable and functional ecosystems. Successful restoration projects require stakeholder involvement and demand consideration of the economic and social context in which restoration is carried out. The policies guiding such processes are also taken into account.

For students choosing the Ecological Restoration Concentration, the following courses each must be used as General Studies courses in order to graduate in 120 hours:

ABS 350 Applied Statistics or equivalent <i>CS</i>	3
ABS 480 Ecosystem Management and Planning <i>L</i>	3
BIO 187 General Biology I <i>SG</i>	4
BIO 188 General Biology II <i>SQ</i>	4
MAT 210 Brief Calculus <i>MA</i>	3

Ecological Restoration Concentration

ABS 207 Applied Plant Taxonomy.....	3
ABS 225 Soils <i>SQ</i> ¹	3
ABS 226 Soils Laboratory <i>SQ</i> ¹	1
ABS 370 Ecology.....	3
ABS 380 Restoration and Wildlife Plants.....	3
ABS 381 Natural Resources Policy.....	3
ABS 402 Vegetation and Wildlife Measurement.....	3
ABS 440 Ecological Restoration Techniques.....	3
ABS 441 Ecological Restoration Practicum.....	1
ABS 480 Ecosystem Management and Planning <i>L</i>	3
ABS 482 Ecology and Planning for Restoration.....	3
ABS 483 Restoration Planning Practicum.....	2
ABS 485 GIS in Natural Resources.....	3
ABS 490 Applied Biological Sciences Seminar.....	1
CHM 101 Introductory Chemistry <i>SQ</i>	4
CHM 231 Elementary Organic Chemistry <i>SQ</i> ²	3
Total.....	42

¹ Both ABS 225 and 226 must be taken to secure SQ credit.

² Both CHM 231 and 235 must be taken to secure SQ credit.

Ecological Restoration Supporting Courses

Select 12 semester hours from the following list, or courses approved by advisor:

ABS 368 Plant Propagation (3)
ABS 374 Introduction to Wildlife Management (3)
ABS 376 Wildlife Ecology (3)
ABS 425 Soil Classification and Management (3)
ABS 430 Watershed Management (3)
ABS 433 Riparian and Wetland Ecology (3)
ABS 434 Soil Ecology (3)
ABS 475 Habitat Management for Small Wildlife (4)
ABS 476 Big Game Habitat Management (3)
ABS 481 Riparian and Wetland Restoration (3)
ABS 486 Introduction to Remote Sensing (4)

L literacy and critical inquiry / *MA* mathematics / *CS* computer/statistics/ quantitative applications / *HU* humanities and fine arts / *SB* social and behavioral sciences / *SG* natural science—general core courses / *SQ* natural science—quantitative / *C* cultural diversity in the United States / *G* global / *H* historical / See “General Studies,” page 92.

Urban Horticulture Concentration

Urban horticulture emphasizes the relationship of plants and people in city environments. Set in a unique southwestern desert location, East campus’s program strives to teach urban horticulture students how to practice principles and develop skills that help create aesthetically pleasing urban environments. This approach is coupled with an appreciation of environmental conservation and stewardship. To achieve this goal, the program specializes in teaching students about the unique aspects of desert horticulture. Through course offerings, students can gain expertise in a diverse array of topics such as landscape plant identification culture and use; creation of public and private gardens in arid climates; management practices of landscape planting and irrigation design; installation and maintenance; xeriscape and water conservation; integrated pest management; installation and management of golf, sports, and recreational turf grass; plant propagation and greenhouse/nursery management. Graduates are qualified to identify and grow ornamental landscape trees, shrubs, ground covers, grasses, flowering potted plants, and bedding plants. They also design, install, and maintain outdoor and indoor landscape environments that enhance urban aesthetics.

Urban Horticulture Concentration

ABS 225 Soils <i>SQ</i> ¹	3
ABS 226 Soils Laboratory <i>SQ</i> ¹	1
ABS 260 Fundamentals of Urban Horticulture <i>SG</i>	4
ABS 362 Landscape Plants and Design.....	4
ABS 363 Landscape and Turf Irrigation.....	4
ABS 364 Urban Forestry.....	3
ABS 462 Greenhouse/Nursery Management.....	4
or ABS 463 Golf and Sports Turf Management (3)	
Choose one of the three courses below.....	3
ABS 465 Senior Enterprise Project (3)	
ABS 484 Internship (3)	
ABS 492 Honors Directed Study (3)	
CHM 101 Introductory Chemistry <i>SQ</i>	4
CHM 231 Elementary Organic Chemistry <i>SQ</i> ²	3
PLB 414 Plant Pathology <i>L</i>	3
or PGM 466 Integrated Pest Control (2)	
Approved upper-division electives.....	6
Total.....	41–43

¹ Both ABS 225 and 226 must be taken to secure SQ credit.

² Both CHM 231 and 235 must be taken to secure SQ credit.

Wildlife Habitat Management Concentration

The wildlife habitat management concentration focuses on the ecological relationship between wildlife and its habitats. The goal of wildlife habitat management is to create conditions that ensure sustainable wildlife populations. Achieving this goal requires expertise in both wildlife biology and habitat management. The wildlife habitat management concentration is distinguished by its strong emphasis on habitat management. While students are expected to master the material found in traditional wildlife biology curricula, they are also expected to develop strong expertise in habitat management. This background in habitat management requires proficiency in the botanical sciences, including plant ecology, and provides a synergistic link with the ecological restoration concentration. The applied nature of the concentration is emphasized by the requirement for

mastery of the analytic technologies, ranging from quantitative ecology and ecological modeling, to the use of geographic information systems, and a comprehensive understanding of the economic and policy contexts in which wildlife habitat management occurs.

Wildlife Habitat Concentration General Studies

Requirements. For students choosing the wildlife habitat concentration, the following courses must be used as General Studies courses in order to graduate in 120 hours:

ABS 350 Applied Statistics or equivalent <i>CS</i>	3
ABS 480 Ecosystem Management and Planning <i>L</i>	3
BIO 187 General Biology I <i>SG</i>	4
BIO 188 General Biology II <i>SQ</i>	4
MAT 210 Brief Calculus <i>MA</i>	3

Wildlife Habitat Management Concentration

ABS 207 Applied Plant Taxonomy.....	3
ABS 355 Vertebrate Zoology.....	4
ABS 370 Ecology.....	3
ABS 374 Introduction to Wildlife Management.....	4
ABS 376 Wildlife Ecology.....	3
ABS 402 Vegetation and Wildlife Measurement.....	3
ABS 440 Ecological Restoration Techniques.....	3
ABS 480 Ecosystem Management and Planning <i>L</i>	3
ABS 485 GIS in Natural Resources.....	3
ABS 490 Applied Biological Sciences Seminar.....	1
CHM 101 Introductory Chemistry <i>SQ</i>	4
CHM 231 Elementary Organic Chemistry <i>SQ</i> *.....	3
Total.....	37

* Both CHM 231 and 235 must be taken to secure SQ credit.

Wildlife Supporting Courses

Select nine semester hours from the following list, or courses approved by advisor:

ABS 375 Conservation Biology.....	3
ABS 378 Wildlife Nutrition.....	3
ABS 470 Mammalogy.....	3
ABS 471 Ornithology.....	3
ABS 475 Habitat Management for Small Wildlife.....	4
ABS 476 Big Game Habitat Management.....	3
BIO 331 Animal Behavior.....	3
BIO 385 Comparative Invertebrate Zoology.....	4
BIO 410 Techniques in Wildlife Conservation Biology <i>L</i>	3
BIO 426 Limnology <i>L</i>	4
BIO 473 Ichthyology.....	3
BIO 474 Herpetology.....	3

Habitat Supporting Courses

Select nine semester hours from the following list, or courses approved by advisor:

ABS 225 Soils <i>SQ</i> *.....	3
ABS 226 Soils Laboratory <i>SQ</i> *.....	1
ABS 368 Plant Propagation.....	3
ABS 380 Restoration and Wildlife Plants.....	3
ABS 381 Natural Resource Policy.....	3
ABS 430 Watershed Management.....	3
ABS 433 Riparian and Wetland Ecology.....	3
ABS 435 Ecological Modeling.....	3
ABS 481 Riparian and Wetland Restoration.....	3
ABS 486 Introduction to Remote Sensing.....	4
PLB 308 Plant Physiology.....	4

* Both ABS 225 and 226 must be taken to secure SQ credit.

BIS CONCENTRATION

A concentration in applied biological sciences is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and interdisciplinary core, students in the BIS program take active roles creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 124.

MINOR

The Applied Biological Sciences minor consists of 24 semester hours, including BIO 187 General Biology I, BIO 188 General Biology II, ABS 312 Structure and Function, and at least 12 hours selected with the approval of an advisor; at least nine hours must be in the upper division. This minor is not available to students majoring in life sciences.

GRADUATE PROGRAMS

Faculty associated with the Applied Biological Sciences program also offer a program leading to an MS degree in Applied Biological Sciences. Selected faculty also participate with the Division of Graduate Studies and the Colleges of Architecture and Environmental Design and Liberal Arts and Sciences in programs leading to PhD degrees in Environmental Design and Planning, with a concentration in Planning, and a PhD degree in Plant Biology. See the *Graduate Catalog* for requirements.

Biology and plant biology courses regularly offered on East campus include BIO 340, BIO 360, PLB 308, and PLB 414. For courses, see “School of Life Sciences,” page 422.

APPLIED BIOLOGICAL SCIENCES (ABS)**ABS 130 Introduction to Environmental Science. (4)***fall*

Introduces resources, their physical and chemical properties, classification, energy dynamics, and the role they play in environmental quality. Lecture, lab.

General Studies: SQ

ABS 191 First-Year Seminar. (1–3)*selected semesters***ABS 207 Applied Plant Taxonomy. (3)***spring*

Introduces identification of vascular plants emphasizing seed plants. Surveys seed plant families. Lecture, lab, field trips. Fee. Prerequisite: BIO 187.

ABS 225 Soils. (3)*fall*

Fundamental properties of soils and their relations to plant growth, nutrition of man and animals, and environmental quality. Prerequisite: CHM 101 or 113 (or its equivalent).

General Studies: SQ (if credit also earned in ABS 226)

ABS 226 Soils Laboratory. (1)*fall*

Selected exercises to broaden the background and understanding of basic soil principles. Lab. Fee. Pre- or corequisite: ABS 225.

General Studies: SQ (if credit also earned in ABS 225)

ABS 260 Fundamentals of Urban Horticulture. (4)*fall*

Principles and practices of horticulture, emphasizing development, growth, and propagation of horticultural plants and environmental factors that affect these processes. 3 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 187 or PLB 108.

General Studies: SG

ABS 294 Special Topics. (1–4)*selected semesters***ABS 300 Environmental Biology. (3)***spring*

Applies biological sciences to environmental issues. Includes ecological, historical, and global perspectives on environmental conservation.

ABS 301 Technology and Biology. (2)*spring*

Demonstrations of a broad range of innovative technologies in molecular biology, cellular and organismal biology, horticulture, and wildlife and restoration ecology. Fee.

ABS 302 Policy and Biology. (2)*fall*

Policy environment for the practice of biology. Covers policy formulation, regulatory agencies, and policies in biotechnology, agriculture, and environment.

ABS 311 Applied Cellular Biology. (3)*spring*

Overview of the biology of the cell, with emphasis on structure and function of biomolecules within the cell. Prerequisites: BIO 182; CHM 231 (or their equivalents).

ABS 312 Structure and Function. (4)*spring*

Surveys structural and functional attributes of plant and animals of particular importance in the applied biological sciences. Lecture, lab. Fee. Prerequisite: BIO 187.

ABS 350 Applied Statistics. (3)*fall and spring*

Statistical methods with applications in the biological sciences and natural resource management. Uses computers and the Internet. Prerequisite: MAT 117 (or its equivalent).

General Studies: CS

ABS 355 Vertebrate Zoology. (4)*spring*

Classification, anatomy, and physiology of the vertebrates. Lecture, lab. Prerequisites: BIO 188 and CHM 101 (or their equivalents).

ABS 360 Southwest Home Gardening. (2)*fall and spring*

Multimedia course for nonmajors surveying contemporary topics in Southwest home horticulture, including landscaping, flower and vegetable gardening, citriculture, interiorscaping, and others.

ABS 362 Landscape Plants and Design. (4)*spring*

Identification, design, and use of plants in urban landscapes. Lecture, lab. Cross-listed as PGM 367. Credit is allowed for only ABS 362 or PGM 367. Fee. Prerequisite: ABS 260 (or its equivalent).

ABS 363 Landscape and Turf Irrigation. (4)*fall*

Design, management, and maintenance of landscape and turf irrigation systems. Lecture, lab. Cross-listed as PGM 363. Credit is allowed for only ABS 363 or PGM 363. Fee.

ABS 364 Urban Forestry. (3)*fall*

Care, maintenance, and valuation of the urban forest, including public and private landscape codes. Prerequisite: ABS 260 (or its equivalent).

ABS 366 Indoor Plants. (3)*fall or spring*

Identification, culture, and use of container-grown plants for interior environments. Prerequisite: ABS 260 or instructor approval.

ABS 367 Urban Parks. (4)*spring*

Overview of the management and maintenance of private and public parks, urban greenspaces, and recreational areas. Lecture, lab. Fee.

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See “General Studies,” page 92.

EAST COLLEGE

ABS 368 Plant Propagation. (3)

spring

Theory and application of sexual and asexual propagation techniques. Considers plant materials used both for urban horticulture and ecological restoration applications. 2 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 188.

ABS 370 Ecology. (3)

fall

Interactions between organisms and their environments; structure and dynamics of populations, communities, ecosystems, and landscapes, with emphasis on vegetation. Lecture, field trips. Prerequisite: BIO 188.

ABS 372 Ecology: Ecosystems and Landscapes. (3)

spring

Structure and function of ecosystems, interactions of pattern and process in landscapes. Lecture, lab, field trips. Prerequisite: ABS 370.

ABS 374 Introduction to Wildlife Management. (4)

spring

Managing wildlife in the Southwest, including life histories of small game, fur bearers, big game, and selected nongame specials. Fee. Lecture, lab, field trips.

ABS 375 Conservation Biology. (3)

spring

Principles of conservation biology, management of threatened species and ecosystems, biodiversity patterns with emphasis on issues in the Southwest. Lecture, field trips. Fee.

ABS 376 Wildlife Ecology. (3)

spring

Examines ecological principles underlying wildlife population dynamics with emphasis on physiology, genetics, nutrition, and habitat factors. Lecture, lab. Prerequisite: ABS 370.

ABS 378 Wildlife Nutrition. (3)

fall

Principles of nutrient metabolism in wildlife species, with emphasis on understanding the interaction of wildlife with their environment. Prerequisites: BIO 188; CHM 101.

ABS 380 Restoration and Wildlife Plants. (3)

fall

Important wildland plants, including invasive and endangered species, wildlife food species, and species used for ecosystem restoration. Lecture, lab. Prerequisite: ABS 207 or 260.

ABS 381 Natural Resources Policy. (3)

fall

Policies and regulations affecting management of natural resources, with emphases on wildlife and ecological restoration.

ABS 402 Vegetation and Wildlife Measurement. (3)

spring

Vegetation inventory, sampling, monitoring, and evaluation. Methods of estimating wildlife populations, activity, and home ranges. Lecture, lab, 1 weekend field trip. Prerequisites: ABS 207, 350, 370.

ABS 425 Soil Classification and Management. (3)

selected semesters

Principles of soil genesis, morphology, and classification. Presents management and conservation practices. Prerequisite: ABS 225 (or its equivalent).

ABS 430 Watershed Management. (3)

selected semesters

Hydrologic, physical, biological, and ecological principles applied to watershed management. Impact of ecosystem manipulations on water yield and quality. Lecture, 1 weekend field trip. Prerequisite: ABS 225.

ABS 433 Riparian and Wetland Ecology. (3)

selected semesters

Functions and components of riparian and wetland ecosystems and the management of these systems. Lecture, field trips. Prerequisite: ABS 370.

ABS 434 Soil Ecology. (3)

selected semesters

Soils viewed in an ecosystem context, soil-plant relationships, nutrient budgets, and abiotic factors that influence soil processes. Lecture, lab, field trips. Prerequisites: ABS 225, 226, 370.

ABS 435 Ecological Modeling. (3)

fall

Simulation modeling as a tool to study ecological processes and human impact on ecosystems and organisms. Lecture, lab. Prerequisites: ABS 350, 370.

ABS 440 Ecological Restoration Techniques. (3)

fall

Techniques for ecological restoration, riparian and wetland restoration, and monitoring restoration success. Prerequisites: ABS 370, 380.

ABS 441 Ecological Restoration Practicum. (1)

fall

Field experience in the evaluation and monitoring of implemented ecological restoration projects. Lab, field trips. Fee. Pre- or corequisite: ABS 440.

ABS 460 Organic Gardening. (2)

fall

Applies principles and practices of organic gardening in the low desert, including environmental impacts of modern food production. 1 hour lecture, 3 hours lab. Fee. Prerequisite: ABS 260.

ABS 462 Greenhouse/Nursery Management. (4)

spring

Greenhouse structures, environment, and nursery operations. Includes irrigation, nutrition, and other principles relative to production of nursery crops. 1 hour lecture, 3 hours lab. Fee. Prerequisite: ABS 260.

ABS 463 Golf and Sports Turf Management. (3)

fall

Selection, establishment, and maintenance of turf grasses bred specifically for golf and sports facilities. Cross-listed as PGM 463. Credit is allowed for only ABS 463 or PGM 463. Integrated lecture/lab.

ABS 465 Senior Enterprise Project. (3)

fall and spring

Selection and completion of an urban horticulture project with faculty advisor approval related to the field of study. Prerequisite: senior standing.

ABS 470 Mammalogy. (3)

fall

Classification and biology of mammals, emphasizes North America. Pre- or corequisite: ABS 355.

ABS 471 Ornithology. (3)

spring

Classification and biology of birds, emphasizing North America. Lecture, lab, field trips. Fee. Prerequisite: ABS 355.

ABS 475 Habitat Management for Small Wildlife. (4)

fall

Habitat management considerations and practices for small game and nongame wildlife species in North America. Lecture, lab, field trips. Fee. Prerequisites: ABS 370, 376, 380.

ABS 476 Big Game Habitat Management. (3)

spring

Habitat management considerations and practices for big game wildlife species in North America. 2 hours lecture, 3 hours lab. Prerequisites: ABS 370, 376. Pre- or corequisite: ABS 402.

ABS 480 Ecosystem Management and Planning. (3)

selected semesters

Principles of ecosystem management, with emphasis on economic and policy constraints on the planning process. Risk assessment and management. Lecture, 1 weekend field trip. Prerequisite: senior standing or instructor approval.

General Studies: L

ABS 481 Riparian and Wetland Restoration. (3)

fall

Principles and problems in the restoration of degraded riparian and wetland ecosystems. Construction of wetlands. Prerequisites: ABS 433, 440.

ABS 482 Ecology and Planning for Restoration. (3)

spring

Ecological principles and resource planning processes applied to the restoration of degraded landscapes. Prerequisites: ABS 225, 372, 440.

- ABS 483 Restoration Planning Practicum. (2)**
spring
 Field experience in ecological restoration techniques, selection of mitigation techniques, and implementation planning. Lab, extended field trip over spring break. Fee. Pre- or corequisite: ABS 482.
- ABS 484 Internship. (1–12)**
selected semesters
- ABS 485 GIS in Natural Resources. (3)**
fall
 Principles of Geographic Information Systems (GIS) utilized in natural resource management. Use of computers for spatial analysis of natural resources. Lecture, lab. Prerequisite: ABS 350 (or its equivalent).
- ABS 486 Introduction to Remote Sensing. (4)**
selected semesters
 Remote sensing technologies in natural resource management using computerized data from aerial photography and satellite imagery. Not for graduate credit. Lecture, lab.
- ABS 489 Undergraduate Research. (1–3)**
fall and spring
 Undergraduate research under the supervision of an applied biological sciences faculty member. Prerequisite: junior or senior standing.
- ABS 490 Applied Biological Sciences Seminar. (1)**
fall and spring
 Current literature and significant developments related to applications of the biological sciences. May be repeated for credit. Prerequisite: junior or senior standing.
- ABS 492 Honors Directed Study. (1–6)**
selected semesters
- ABS 493 Honors Thesis. (1–6)**
selected semesters
- ABS 494 Special Topics. (1–4)**
selected semesters
- ABS 498 Pro-Seminar. (1–7)**
selected semesters
- ABS 499 Individualized Instruction. (1–3)**
selected semesters
- Omnibus Courses.** For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
- Graduate-Level Courses.** For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

tion, or manufacturing. Although most careers in psychology require graduate training, there are some employment opportunities for BS students in applied settings. For example, there is a need for individuals who can help deal with problems of usability of products and systems. The Applied Psychology program offers courses and experiences to prepare students for these positions. The rigor of the major also provides strong preparation for further graduate study in psychology. The program serves students in other East campus programs such as manufacturing engineering technology, aeronautical management technology, industrial technology, and business administration.

Graduation Requirements

The completion of 120 semester hours—including First-Year Composition, General Studies (see “General Studies,” page 92), and major requirements—leads to the BS degree. The major allows for at least 21 semester hours of electives. The major requirements for the BS degree in Applied Psychology consist of a 28-semester-hour core of psychology courses, 12 semester hours in applied psychology, and 18 semester hours of related course work.

Core Courses. Core courses provide a general background in the basic scientific areas of psychology and provide a culminating experience to integrate the varied studies.

PGS 101 Introduction to Psychology <i>SB</i>	3
PGS 350 Social Psychology <i>SB</i>	3
PSY 230 Introduction to Statistics <i>CS</i>	3
PSY 290 Research Methods <i>L/SG</i>	4
PSY 323 Sensation and Perception	3
PSY 324 Memory and Cognition	3
PSY 325 Physiological Psychology	3
PSY 330 Statistical Methods <i>CS</i>	3
PSY 477 Applied Psychology Capstone Experience*	3
or HON 493 Honors Thesis <i>L (3)</i>	
Total	28

* This PSY course is offered only by East campus. All other PSY courses listed above are offered by East and Tempe campuses.

Applied Psychology Courses. Students work with an advisor to select courses in Applied Psychology emphasizing human-computer interaction, aviation, training, manufacturing, or methods. Course work must include a minimum of four of the following courses:

PGS 304 Effective Thinking <i>L</i>	3
PGS 471 Psychological Testing	3
PSY 320 Learning and Motivation.....	3
PSY 360 Cognitive Science*	3
PSY 390 Experimental Psychology <i>L</i>	3
PSY 437 Human Factors <i>L</i>	3
PSY 438 Human-Computer Interaction*	3
PSY 439 Training and Skill Acquisition*	3
PSY 440 Industrial/Organizational Psychology*.....	3
PSY 448 Human Factors in Transportation*.....	3
PSY 449 Human Factors in Sport*	3

Faculty of Applied Psychology

www.east.asu.edu/ecollege/appliedpsych

480/727-1515

SUTTON, Third Floor

Roger W. Schvaneveldt, Faculty Head

Professors: Cooke, Schvaneveldt

Assistant Professor: Gray

APPLIED PSYCHOLOGY—BS

This major offers a traditional psychology core leading to graduate school preparation and/or to applications in human factors with emphasis on human-computer interaction, avia-

L literacy and critical inquiry / **MA** mathematics / **CS** computer/statistics/ quantitative applications / **HU** humanities and fine arts / **SB** social and behavioral sciences / **SG** natural science—general core courses / **SQ** natural science—quantitative / **C** cultural diversity in the United States / **G** global / **H** historical / See “General Studies,” page 92.

EAST COLLEGE

PSY 494 Special Topics1-4

* This PSY course is offered only by East campus. All other PSY courses listed above are offered by East campus and Tempe campus.

Related Course Work

BIO course with a lab4
 MAT 210 Brief Calculus MA.....3
 or a higher MAT course (3)
 Computer skills course.....3
 Writing skills course3
 Courses selected in consultation with an advisor5
 Total18

Minor in Applied Psychology

The minor in applied psychology consists of 22 semester hours with at least 12 being upper-division courses. The following are required courses that must be completed with a grade of “C” (2.00) or higher:

PGS 101 Introduction to Psychology *SB*.....3
 PSY 230 Introduction to Statistics *CS*.....3
 or equivalent statistics course
 PSY 290 Research Methods *L/SG*.....4
 PSY 437 Human Factors *L*.....3
 or PSY 438 Human-Computer Interaction* (3)
 or PSY 440 Industrial/Organizational Psychology* (3)
 Additional hours of upper-division PSY and/or PGS courses9

* This PSY course is offered only by East campus. All other PSY courses listed above are offered by East campus and Tempe campus.

A maximum of three semester hours from the following courses can be used to satisfy minor requirements:

PGS 399 Supervised Research3
 PGS 499 Individualized Instruction3
 or PSY 499 Individualized Instruction (3)
 PSY 492 Honors Directed Study.....3

Note: A minimum of three classes (two of which are in the upper division) must be taken in residence at ASU.

For more information about program requirements and courses, call an East College advisor at 480/727-1515, or access the Web site at www.east.asu.edu/ecollege/appliedpsych.

For PGS courses and additional PSY courses, see “Department of Psychology,” page 458.

PSYCHOLOGY (SCIENCE AND MATHEMATICS) (PSY)

For more PSY courses, see “Course Prefix Index,” or access www.asu.edu/aad/catalogs/courses. The campus designation—*E* (East), *M* (Tempe), or *W* (West)—may affect how courses may be used to fulfill requirements.

E PSY 360 Cognitive Science. (3)

selected semesters

Examines cognition from the varied perspectives of philosophy, linguistics, psychology, computer science (artificial intelligence), and neuroscience. Lecture, discussion. Prerequisite: PSY 324.

E PSY 438 Human-Computer Interaction. (3)

once a year

Theories, methods, and findings concerning the usability of computer systems and the design of effective user interfaces. Lecture, discussion, projects. Prerequisite: PSY 437.

E PSY 439 Training and Skill Acquisition. (3)

once a year

Theories, methods, and findings concerning the acquisition of skilled performance and the design of effective training systems. Lecture, discussion, projects. Prerequisite: PSY 437.

E PSY 440 Industrial/Organizational Psychology. (3)

once a year

Examines personnel selection, performance assessment, job and workplace design, job satisfaction, organizational behavior, management systems, and industrial safety. Lecture, discussion, projects. Prerequisite: PSY 230 (or an equivalent statistics course).

E PSY 448 Human Factors in Transportation. (3)

selected semesters

Examines human performance and human-machine design issues in aviation and ground transportation. Integrated lecture/lab. Pre- or corequisite: PSY 323.

E PSY 449 Human Factors in Sport. (3)

selected semesters

Examines how psychological principles can be applied to enhance the performance of athletes and coaches. Lecture, discussion. Pre- or corequisites: PSY 320, 323.

E PSY 477 Applied Psychology Capstone Experience. (3)

fall and spring

Applied psychology from a systems perspective. Requires a report based on research and/or applied work as a culminating experience. Lecture, discussion, projects. Prerequisite: senior standing.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

Faculty of Business Administration

www.east.asu.edu/ecollege/businessadmin

480/727-1515

SUTTON, Third Floor

Roger W. Hutt, Faculty Head

Professors: Daneke, Edwards, Kagan, Marquardt, Shultz, Thor

Associate Professors: Butler, Hutt, Patterson, Richards

Assistant Professors: Manfredo, Skilton

Lecturer: Watson

BUSINESS ADMINISTRATION—BS

The BS degree in Business Administration offers a survey of contemporary business disciplines and additional depth in at least three disciplines. The curriculum enables students to gain essential business competencies, knowledge of business disciplines and methods, and appreciation for contemporary business environments and cultures. Students prepare for careers in business, industry, or government, as well as for career advancement and entrepreneurial enterprises. This program operates under the umbrella of the AACSB

International-accredited Tempe campus W. P. Carey School of Business, but it is offered through East College.

A total of 120 semester hours is required for graduation with a minimum of 51 semester hours of upper-division credit. As part of the undergraduate degree program, students complete the General Studies requirement (see “General Studies,” page 92).

Requirements for the Business Administration major consist of 30 semester hours of lower-division core and skill courses, 22 semester hours of upper-division core courses, one three-semester-hour capstone course, and 18 semester hours of approved electives. All of the upper-division business courses (with the exception of nine semester hours) must be taken at East campus.

Business Administration Core

BUA 394 ST: Professional Development.....	1
FIN 300 Fundamentals of Finance	3
IBS 300 Principles of International Business G.....	3
LES 305 Legal, Ethical, and Regulatory Issues in Business.....	3
MGT 300 Organizational Management and Leadership	3
MKT 300 Principles of Marketing.....	3
SCM 300 Global Supply Operations.....	3
TWC 447 Business Reports L.....	3
Total	22

Capstone Course (Three Semester Hours)

MGT 440 Small Business and Entrepreneurship.....	3
or MGT 494 ST: Strategic Management (3)	

Approved Electives (18 Semester Hours)

Electives	18
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Students select 18 semester hours of electives toward a goal of building upon and integrating prior and current course work. This set of courses, which must be approved by the Business Administration program head, allows students to study a subset of business problems or issues as well as focus on their career interests.

Approved electives include courses in East campus industry-specific business programs (Aeronautical Management Technology, Agribusiness, and Information and Management Technology).

For the latest information about application, admissions, program requirements, and courses, call East College at 480/727-1515, or access the Web site at www.east.asu.edu/ecollege/businessadmin.

REAL ESTATE—BS

The Real Estate faculty offer a unique, integrated, one-year program designed for the student’s last year of college. This innovative and award-winning program emphasizes student involvement with real estate executives on projects in the Phoenix metropolitan area. Students work in teams to develop their analytical, communication, technology, and team skills.

The program is organized around five aspects of real estate: brokerage/management, development, financing, investments, and market analysis. With broad interdisciplinary perspective, emphasis on team work, and involvement in projects, students may pursue careers in land development, investment analysis, appraisal, property management, brokerage, and mortgage finance.

Successful completion of the program satisfies the requirements of the major based on the following courses:

LES 411 Real Estate Law	3
REA 300 Real Estate Analysis.....	3
REA 331 Real Estate Finance.....	3
REA 401 Real Estate Appraisal	3
REA 441 Real Estate Land Development.....	3
REA 456 Real Estate Investments	3
Total	18

In addition to the courses listed for the major, students in the program also satisfy the requirement for BUS 301 Fundamentals of Management Communication (listed in the business core) and BUS 451 Business Research Methods (listed as a major support course). These courses are integrated into the major, not taken separately. Because of the emphasis on teamwork, interaction with business professionals, and completion of all requirements within a year, students may enter the program in only the fall semester. Classes meet from 9 to 11:45 A.M. Monday through Thursday in a classroom assigned to the Real Estate program. For more information, call 480/727-1055.

Minor in Small Business

The minor in small business is available to nonbusiness majors and consists of 18 semester hours, with five required courses and one approved elective. BUA 380 Small Business Leadership is a prerequisite or corequisite for other courses.

Requirements

BUA 380 Small Business Leadership	3
BUA 381 Small Business Accounting and Finance	3
BUA 382 Small Business Sales and Market Development.....	3
BUA 383 Small Business Working Relationships	3
BUA 384 Small Business Operations and Planning	3
Approved elective	3
Total	18

BIS Concentration in Small Business (BIS Majors Only)

The requirements for the small business concentration are identical to those for the minor in Small Business listed above. For BIS degree requirements, see “School of Interdisciplinary Studies,” page 124.

BUSINESS ADMINISTRATION (BUA)

BUA 300 Career Management. (1)

fall, spring, summer

Provides professional program business administration students with information on ASU business-related courses, business careers, interviewing, job hunting, and résumé skills.

BUA 330 Organizational Leadership. (3)

fall and spring

Strategies, skills, and techniques that promote successful leadership within organizations. Practice leadership skills and self-discovery in preparation for leadership positions.

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See “General Studies,” page 92.

EAST COLLEGE

BUA 380 Small Business Leadership. (3)

fall, spring, summer

Develops leadership skills needed to form, lead, and operate a small business. Emphasizes creating a vision, research, and problem solving. Lecture, team teaching, collaborative learning.

BUA 381 Small Business Accounting and Finance. (3)

fall and spring

Accounting and finance skills needed by small business owners to acquire, allocate, and track monetary resources and evaluate performance. Lecture, team teaching, collaborative learning.

BUA 382 Small Business Sales and Market Development. (3)

fall and spring

Building and maintaining customers, developing a market identity and a niche, and the importance of sales. Lecture, team teaching, collaborative learning.

BUA 383 Small Business Working Relationships. (3)

fall and spring

Addresses communication and the people in a business—clients, employees, suppliers, competitors, governments, family, and self development. Lecture, team teaching, collaborative learning.

BUA 384 Small Business Operations and Planning. (3)

fall and spring

Planning and executing plans—the what, when, where, how, and who from product/service/project idea to pay back or completion. Lecture, team teaching, collaborative learning.

BUA 394 Special Topics. (1–4)

selected semesters

Topics may include the following:

- Business Professional Development. (1)
- Professional Development. (1)

BUA 440 Strategic Management. (3)

fall, spring, summer

Strategic formulation and administration of the total organization, including integrative analysis and strategic plan; interrelationship of business functional areas. Prerequisites: professional program business student; senior standing.

BUA 441 Entrepreneurship and Feasibility. (3)

fall, spring, summer

Assessment of the opportunities, risks, and challenges associated with business start-up and continued operation. Prerequisites: completion of 100 hours; professional program business student. Pre- or corequisite: completion of all Business Administration core requirements.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

REAL ESTATE (REA)

REA Note 1. In addition to individual course prerequisites, nonbusiness students must have at least a 2.50 ASU cumulative GPA, a 2.50 ASU business GPA, and 56 earned semester hours to register for any upper-division business course unless otherwise noted.

REA 300 Real Estate Analysis. (3)

once a year

Applies economic theory and analytical techniques to real estate markets. Topics include law, finance, appraisal, market analysis, investments, development. See REA Note 1. Prerequisite: professional program business student.

REA 331 Real Estate Finance. (3)

once a year

Legal, market, and institutional factors related to financing proposed and existing properties. Emphasizes current financing techniques and quantitative methods. See REA Note 1. Prerequisites: FIN 300; professional program business student.

REA 380 Real Estate Fundamentals. (3)

fall and spring

Real estate for the student/consumer with an emphasis on the applied aspects of each area of real estate specialization. Not open to Real Estate majors. See REA Note 1. Prerequisites: 2.00 ASU GPA; junior standing.

REA 401 Real Estate Appraisal. (3)

once a year

Factors affecting the value of real estate. Theory and practice of appraising and preparation of the appraisal report. Appraisal techniques. See REA Note 1. Prerequisites: REA 300; professional program business student.

REA 441 Real Estate Land Development. (3)

once a year

Neighborhood and city growth. Municipal planning and zoning. Development of residential, commercial, industrial, and special purpose properties. See REA Note 1. Prerequisites: REA 300; professional program business student.

REA 456 Real Estate Investments. (3)

once a year

Analyzes investment decisions for various property types. Cash flow and rate of return analysis. See REA Note 1. Prerequisites: FIN 300; professional program business student.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

Faculty of Education

www.east.asu.edu/ecollege/education

480/727-1103

SUTTON 240E

Bette S. Bergeron, Faculty Head

Professors: Bergeron, Darst

Assistant Professors: Kulinna, Mahoney, Marble, White-Taylor

Clinical Assistant Professors: Molina-Walters, Smith

Senior Lecturers: Stever, Wenhart

Lecturers: Foley, Gomez, Hopper, Orlowicz, Prest

ELEMENTARY EDUCATION—BAE

Program Overview

The Elementary Education program at East campus is unique in its focus on intensive field experiences, practical application of current theory, and emphasis on technology. The curriculum is also focused on and directly aligned with Arizona’s standards for teachers. Courses are arranged sequentially and taken with peer cohorts in four semester-long blocks. Each semester Elementary Education students are immersed in field experiences that directly link with course discussions and assignments. Course instructors have taught in a variety of K–8 settings and can therefore augment class experiences with practical applications. Current educational technologies are incorporated into course delivery and assignments. Additionally, students have the opportunity to choose between the daytime Elementary Education program at the East campus or participate in one of the campus’s district-based evening cohorts.

Graduation Requirements

A total of 120 semester hours is required for graduation with a minimum of 45 semester hours of upper-division credit. As part of the undergraduate degree program, students will complete ASU General Studies (see “General Studies,” page 92) requirements. In addition, Elementary Education students are required to complete 18 semester hours in an academic specialization, which is tailored to an individual student’s academic strengths (e.g., math, science, social studies, English). The remaining program hours, which specifically focus on the teaching profession, are outlined below. Students must first be admitted to the East Elementary Education program before enrolling in the Professional Preparation Program courses (Blocks I–IV).

Foundations (15 semester hours)*

ECD 314 The Developing Child.....	3
EDP 310 Educational Psychology <i>SB</i>	3
MCE 446 Understanding the Culturally Diverse Child <i>C</i>	3
MTE 180 Theory of Elementary Mathematics.....	3
SPE 311 Orientation to Education of Exceptional Children <i>SB, C</i>	3

* For foundation courses, see “College of Education,” page 192.

Professional Preparation Program*

Block I

EDC 320 Integrated Learning Experience I: Learning Climate	2
EDC 330 Literacy I: Emerging Literacy and Phonemic Awareness	3
EDC 340 Writing and the Professional Educator <i>L</i>	3
EDC 354 Educational Media in the Classroom	3
EDC 474 Field Experience	0–1

Block II

EDC 325 Integrated Learning Experience II: Instructional Design and Implementation	2
EDC 335 Literacy II: Intermediate Literacy and Phonetic Principles.....	3
EDC 345 Math Methods for the Elementary Classroom.....	3
EDC 355 Accommodating Instruction for Diverse Learners.....	3
EDC 474 Field Experience	0–1

Block III

EDC 420 Integrated Learning Experience III: Assessment	2
EDC 430 Literacy III: Interventions	3
EDC 440 Science Methods for the Elementary Classroom.....	3
EDC 450 Social Studies Methods for the Elementary Classroom	3
EDC 474 Field Experience	0–1

Block IV

EDC 425 Integrated Learning Experience IV: Professional Knowledge	2
EDC 484 Student Teaching in the Elementary School	10–12

* Block courses can only be taken upon admission to the Elementary Education program.

Postbaccalaureate Program. Individuals who hold a bachelor’s degree from an accredited institution are encouraged to participate in the Elementary Education program as non-degree graduate students. Postbaccalaureate students complete the same professional preparation program courses as outlined above, which are augmented by the students’ unique life and work experiences.

In addition to participation in any of the four-semester undergraduate Elementary Education programs, postbaccalaureate students also have the option of an accelerated program with a master’s degree option. For more information, call 480/727-1103.

Application. Applications for the East Elementary Education programs are due October 15 for spring admission, and April 15 for fall admission. Students eligible for admission must meet the following criteria:

1. admission to East campus;
2. a minimum cumulative GPA of 2.50;
3. completion of at least 56 semester hours at the time of admission (undergraduate degree-seeking students); or, completion of a bachelor’s degree from an accredited institution (postbaccalaureate students); and
4. evidence of competence in written English.

Applications include two letters of recommendation and a résumé outlining work with school-age children and/or their families. Students should call the East campus Teacher Education Office at 480/727-1103 for complete admission packet information and eligibility requirements.

State Certification. Students who successfully complete the undergraduate or postbaccalaureate routes to Elementary Education teacher preparation at East campus are recommended for K–8 certification in the State of Arizona pending the completion of all other requirements mandated by the state. These additional requirements include, but are not limited to, successful completion of all appropriate areas of the Arizona Education Proficiency Assessment and course work in the United States and Arizona constitutions. Because of the possibility that requirements for state certification may change, students are urged to maintain close contact with their education advisor.

SECONDARY EDUCATION—BAE

The faculty of education offer the BAE in Secondary Education with a concentration (academic specialization) in physical education. Students interested in obtaining certification to teach physical education major in Secondary Education with a concentration in physical education. Once all state certification requirements are met, graduates are eligible to teach physical education in grades K–12.

Graduation Requirements

A total of 120 semester hours is required for graduation, with a minimum of 45 hours of upper-division credit. As part of the undergraduate degree program, students meet the General Studies requirement (see “Meeting the General Studies Requirement,” page 92). Courses specific to the physical education concentration include courses in the content core (including courses offered by Exercise and Wellness), education foundations, and in the methods of teaching physical education. The program concludes with full-time

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See “General Studies,” page 92.

EAST COLLEGE

student teaching experiences in both an elementary and junior high/high school setting.

Application. Students interested in pursuing physical education/Secondary Education need to be admitted into the Education unit before taking the methods courses (usually during the junior year). The following are requirements for admission to the physical education program:

1. Completion of 56 semester hours, including core content course work in physical education/exercise and wellness (the candidate should meet directly with the advisor to determine appropriate content course work that is to be completed before formal admittance);
2. A 2.50 GPA within the area of concentration;
3. Proficiency in written English, met in one of the following ways: (a) GPA of 3.0 in ENG 101 and 102 (or equivalent) or (b) successful completion of a writing tutorial assigned by the Education unit; and
4. Formal application to the East Education program, including two letters of recommendation and current résumé; the résumé and letters should outline the candidate's experiences with children and/or their families and show proficiency in the content (i.e., physical education).

Advising Information. Students interested in the physical education program are advised through the Education unit. Specific program requirements are under revision; students interested in the program should contact the East Education Office at East campus to make an appointment with an advisor. Advising is required at the time a student seeks formal admission into the methods course sequence (approximately the junior year). However, students are encouraged to seek advising from Education as soon as they decide to pursue the physical education certification program.

For the latest information about application, admissions, program requirements, and courses, access the Web site at www.east.asu.edu/ecollege/elementaryed, or call the East campus Teacher Education Office at 480/727-1103 or the prospective student advisor at 480/727-1745.

Physical Education. Candidates for the BAE degree are required to complete the following courses in physical education in addition to the required KIN core courses:

KIN 361 Physical Education in the Secondary School.....	3
KIN 376 Physical Education for the Elementary School.....	3
KIN 382 Adaptive and Inclusive Physical Education.....	3
KIN 480 Methods of Teaching Physical Education.....	3
KIN elective*	3
Total	15

* See an advisor for approved electives.

Academic Specialization Admission Requirements. The following courses must be completed with a "C" (2.00) or higher *before* applying to the ITC program:

At least three KIN core courses	9
At least four semester hours of KIN 110	4
MAT 117 College Algebra	3

The following courses must be completed or in progress when applying to the ITC program:

BIO 201 Human Anatomy and Physiology I <i>SG</i>	4
BIO 202 Human Anatomy and Physiology II.....	4
CHM 101 Introductory Chemistry <i>SQ</i>	4
PGS 101 Introduction to Psychology <i>SB</i>	3
PHY 111 General Physics <i>SQ</i> *.....	3

* Both PHY 111 and 113 must be taken to secure SQ credit.

Students must also complete a three-semester Physical Education Teacher Certification Program professional sequence in the College of Education (23 semester hours).

APPLIED BIOLOGICAL SCIENCES–BS SECONDARY EDUCATION CONCENTRATION

Program Overview

Applied Biological Sciences majors can complete requirements for state certification in Secondary Biology through a concentration in applied biological sciences/secondary education. See "Applied Biological Sciences/Secondary Education Concentration," page 542. Students complete course work in the applied biological sciences core, science content courses related to secondary biology, and courses specific to the secondary education curriculum and instruction. The program concludes with full-time student teaching in secondary science classrooms.

Graduation Requirements

A total of 120 semester hours is required for graduation with a minimum of 45 hours of upper-division credit. As part of the undergraduate degree program, students meet the General Studies requirement (see "General Studies," page 92). Courses specific to the applied biological sciences/secondary education concentration are outlined below:

Applied Biological Sciences Core

ABS 300 Environmental Biology.....	3
ABS 301 Technology and Biology.....	2
ABS 302 Policy and Biology.....	2
ABS 350 Applied Statistics or equivalent <i>CS</i>	3
BIO 187 General Biology I <i>SG</i>	4
BIO 188 General Biology II <i>SQ</i>	4
BIO 340 General Genetics.....	4
MAT 210 Brief Calculus <i>MA</i>	3
Choose one course	3 or 4
ABS 311 Applied Cellular Biology (3)	
— or —	
ABS 312 Structure and Function (4)	
Choose one course	3 or 4
BIO 360 Animal Physiology (3)	
— or —	
PLB 308 Plant Physiology (4)	

Total

31–33

For students choosing the secondary education concentration, the following courses must be used as General Studies courses in order to graduate in 120 hours:

ABS 350 Applied Statistics <i>CS</i> ¹	3
BIO 187 General Biology I <i>SG</i>	4
BIO 188 General Biology II <i>SQ</i>	4
MAT 210 Brief Calculus <i>MA</i>	3

Applied Biological Sciences/Secondary Education Concentration

ABS 207 Applied Plant Taxonomy	3
or ABS 355 Vertebrate Zoology (4)	
ABS 370 Ecology	3
ABS 490 Applied Biological Sciences Seminar.....	1
CHM 113 General Chemistry <i>SQ</i>	4
CHM 116 General Chemistry <i>SQ</i>	4
MIC 205 Microbiology <i>SG</i> ²	3
MIC 206 Microbiology Laboratory <i>SG</i> ²	1
PHY 101 Introduction to Physics <i>SQ</i>	4
Upper-division electives.....	2
Total	25–26

Secondary Education Course Work

BIO 480 Methods of Teaching Biology	3
BIO 482 Advanced Methods of Teaching Biology.....	3
EDC 354 Educational Media in the Classroom	3
EDC 494 ST: Professional Knowledge.....	2
EDP 303 Human Development <i>L</i>	3
EDP 310 Educational Psychology for Non-Teachers <i>SB</i>	3
RDG 301 Literacy and Instruction in the Content Areas	3
SED 403 Middle and Secondary School Principles, Curricula, and Methods.....	3
SED 478 Student Teaching in Secondary Schools	10–12
SED 496 Field Experience	0
SPE 394 ST: Inclusion Practices at the Secondary Level	3
Total	36–38
Concentration total.....	61–64

¹ An equivalent course may be taken in place of ABS 350.
² Both MIC 205 and 206 must be taken to secure SG credit.

Strongly Recommended

MCE 446 Understanding the Culturally Diverse Child <i>C</i>	3
SPE 311 Orientation to Education of Exceptional Children <i>SB, C</i>	3

Application

Students interested in pursuing the applied biological sciences/secondary education concentration need to be admitted into the Education unit before taking the secondary methods courses (usually during the junior year). The following requirements for admission to the applied biological sciences/secondary education concentration mirror those of acceptance into other education programs at East campus. Requirements for entry include

1. completion of 56 semester hours;
2. a 2.50 cumulative GPA;
3. a 2.50 GPA within the major (Applied Biological Sciences);
4. proficiency in written English, met in one of the following ways: (a) GPA of 3.00 in ENG 101 and 102 (or equivalent) or (b) successful completion of a written proficiency exam; and
5. formal application to the East campus Education program, including two letters of recommendation and current résumé; the résumé and letters should outline the candidate’s experiences with adolescents and/or their families and show proficiency in the content (i.e., applied biological sciences).

Advising Information

Students interested in the applied biological sciences/secondary education concentration must participate in dual advising — both in applied biological sciences and education. Education advising is required at the time a student seeks admission to the Education unit. However, students are encouraged to seek advising from Education as soon as they decide to pursue the secondary education concentration. For more information about application, admission, program requirements, and courses, visit the East campus Education Office, SUTTON, call 480/727-1103, or access the Web site at www.east.asu.edu/ecollege/education.

EARLY CHILDHOOD EDUCATION (EAC)

EAC 494 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 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

ELEMENTARY EDUCATION (EDC)

EDC 320 Integrated Learning Experience I: Learning Climate. (2)

fall and spring

Explores factors contributing to a positive and productive classroom learning environment. Interactive forum.

EDC 325 Integrated Learning Experience II: Instructional Design and Implementation. (2)

fall and spring

Design and implementation of developmentally appropriate instruction, and the alignment of instruction with district and state academic standards. Interactive forum. Prerequisite: EDC 320.

EDC 330 Literacy I: Emerging Literacy and Phonemic Awareness. (3)

fall and spring

Development of language from birth to age 8, and appropriate strategies for promoting growth in speaking, listening, reading, and writing. Applied inquiry. Corequisite: EDC 474.

EDC 335 Literacy II: Intermediate Literacy and Phonetic Principles. (3)

fall and spring

Strategies for teaching literacy in intermediate elementary classrooms, the application of phonetic principles to instruction, and integrating literacy across disciplines. Applied inquiry. Prerequisite: EDC 330. Corequisite: EDC 474. Pre- or corequisite: EDC 325.

EDC 340 Writing and the Professional Educator. (3)

fall and spring

Professional writing focused on foundational issues in education, including the culture of schooling, current social contexts, and educational law.

General Studies: L

EDC 345 Math Methods for the Elementary Classroom. (3)

fall and spring

Developmentally appropriate practices for teaching and assessing mathematics in grades K–8. Applied inquiry. Fee. Prerequisite: MTE 180. Corequisite: EDC 474. Pre- or corequisite: EDC 325.

EDC 350 Educational Technology I: Applications. (1)

fall and spring

Module focused on basic technological skills needed for managing classroom instruction. Lab.

L literacy and critical inquiry / **MA** mathematics / **CS** computer/statistics/quantitative applications / **HU** humanities and fine arts / **SB** social and behavioral sciences / **SG** natural science—general core courses / **SQ** natural science—quantitative / **C** cultural diversity in the United States / **G** global / **H** historical / See “General Studies,” page 92.

EAST COLLEGE

EDC 351 Educational Technology II: Instruction and Evaluation. (1)

fall and spring

Module focused on technology as an instructional medium, evaluation, and effective classroom use. Lab. Prerequisite: EDC 350.

EDC 352 Educational Technology III: Design. (1)

fall and spring

Module focused on instructional design utilizing a variety of technologies, including multimedia. Lab. Prerequisite: EDC 351.

EDC 354 Educational Media in the Classroom. (3)

fall and spring

Designing and implementing educational media into the K–12 curriculum. Includes instructional design, evaluation of sources, and introduction to multimedia applications. Prerequisite: acceptance into teacher preparation program.

EDC 355 Accommodating Instruction for Diverse Learners. (3)

fall and spring

Identifying and accommodating learners with special needs, including classroom adaptations in instruction and assessment. Forum, practicum. Prerequisite: SPE 311. Corequisite: EDC 474. Pre- or corequisite: EDC 325.

EDC 420 Integrated Learning Experience III: Assessment. (2)

fall and spring

Principles related to classroom assessment, including the alignment of assessment to curriculum, test interpretation, and a variety of assessment techniques. Interactive forum. Prerequisite: EDC 325.

EDC 425 Integrated Learning Experience IV: Professional Knowledge. (2)

fall and spring

Explores issues related to professional knowledge, including interdisciplinary instruction and the impact of the community on students' learning. Interactive forum. Prerequisite: EDC 420. Corequisite: EDC 484.

EDC 430 Literacy III: Interventions. (3)

fall and spring

Strategies for accommodating students struggling with learning, with a focus on the areas of literacy acquisition and assessment. Forum, practicum. Prerequisites: EDC 335, 355. Corequisite: EDC 474. Pre- or corequisite: EDC 420.

EDC 440 Science Methods for the Elementary Classroom. (3)

fall and spring

Developmentally appropriate practices for teaching and assessing sciences in grades K–8. Applied inquiry. Fee. Prerequisites: EDC 325, 345. Corequisite: EDC 474. Pre- or corequisite: EDC 420.

EDC 450 Social Studies Methods for the Elementary Classroom. (3)

fall and spring

Developmentally appropriate practices for teaching and assessing social studies in grades K–8. Applied inquiry. Prerequisites: EDC 325, 335. Corequisite: EDC 474. Pre- or corequisite: EDC 420.

EDC 455 Diverse Learners in the K–8 Classroom. (3)

fall, spring, summer

Identifies and implements instructional practices for students with diverse needs in the elementary classroom. Laws related to special populations. Interactive forum. Prerequisite: approval of the East Education Office.

EDC 460 Principles of Curriculum and Instruction in the K–8 Classroom. (3)

fall, spring, summer

Current research and practices related to the K–8 curriculum, including application of motivation and learning theories, lesson development, and assessment. Interactive forum. Prerequisite: approval of the East Education Office.

EDC 465 Literacy Instruction in the K–8 Classroom. (3)

fall, spring, summer

Principles of a developmentally appropriate elementary literacy curriculum and related instructional practices. Encompasses reading, language arts, writing, and oral expression. Interactive forum. Prerequisite: approval of the East Education Office. Corequisite: EDC 474.

EDC 474 Field Experience. (0–1)

fall and spring

Applies course content in a K–8 school. Emphasizes observation, classroom management, planning and delivery of instruction, and

assessment. Practicum. Fee. Corequisite: all methods courses in the teacher preparation program must be taken with Field Experience.

EDC 475 Social Studies Instruction in the K–8 Classroom. (3)

fall, spring, summer

Principles of a developmentally appropriate social studies curricula and related instructional practices. Emphasizes cultural diversity and implications of a global society. Interactive forum. Prerequisite: approval of the East Education Office.

EDC 480 Theory of Mathematics and Science Instruction. (3)

fall, spring, summer

Examines theoretical and conceptual frameworks of elementary mathematics and science instruction. Emphasizes academic content standards and prerequisite knowledge. Fee. Prerequisite: approval of the East Education Office.

EDC 484 Student Teaching in the Elementary School. (10–12)

fall and spring

Supervised teaching in the area of specialization. Capstone internship in curriculum, instruction, and classroom management. Internship. Fee. Prerequisites: 2.50 GPA; completion of professional course sequence; approval of the East Education Office. Corequisite: EDC 425.

EDC 485 Science Instruction in the K–8 Classroom. (3)

fall, spring, summer

Principles of a developmentally appropriate science curricula and related instructional practices, with an emphasis on learner-centered methodologies. Fee. Prerequisites: EDC 480 (or instructor approval); approval of the East Education Office. Corequisite: EDC 474.

EDC 494 Special Topics. (1–4)

selected semesters

Topics may include the following:

- Professional Knowledge

EDC 495 Mathematics Instruction in the K–8 Classroom. (3)

fall, spring, summer

Principles of a developmentally appropriate mathematics curricula and related instructional practices, including a range of learning theories and their application. Fee. Prerequisites: EDC 480 (or instructor approval); approval of the East Education Office. Corequisite: EDC 474.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

ENGLISH AS A SECOND LANGUAGE (ELL)

ELL 484 Internship. (1–12)

selected semesters

ELL 494 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 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

INSTRUCTIONAL MEDIA (IMD)

IMD 494 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 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

PHYSICAL EDUCATION (PPE)

PPE 484 Internship. (1–12)
selected semesters

PPE 494 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 63.

SECONDARY EDUCATION EAST (SDE)

SDE 194 Special Topics. (1–4)
selected semesters

SDE 294 Special Topics. (1–4)
selected semesters

SDE 394 Special Topics. (1–4)
selected semesters

SDE 484 Internship. (1–12)
selected semesters

SDE 494 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 63.

SPECIAL EDUCATION (EAST) (SPC)

SPC 294 Special Topics. (1–4)
selected semesters

SPC 484 Internship. (1–12)
selected semesters

SPC 494 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 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

Department of Exercise and Wellness

www.east.asu.edu/ecollege/wellness

480/727-1945

EAW

William J. Stone, Chair

Professors: Burkett, Stone

Associate Professors: Phillips, Swan

Assistant Professors: Adams, Tudor-Locke

Senior Lecturer: Woodruff

Lecturer: Sebren

EXERCISE AND WELLNESS—BS

The BS degree in Exercise and Wellness offers two concentrations: (1) exercise and wellness and (2) health promotion. Exercise and Wellness students study physical activity and other healthy lifestyles as they relate and contribute to optimal health and wellness. The exercise and

wellness concentration is designed to prepare professionals and scholars in exercise and physical activity leadership as well as in wellness education. Areas of study include the kinesiological and physiological foundations of physical activity, exercise testing and prescription, as well as nutrition, stress management, social/cultural issues, and factors involved in health behavior change. The health promotion concentration is designed to prepare professionals and scholars in health and wellness promotion and disease prevention and management. Areas of study include epidemiology, health behavior change, prevention of chronic disease, program development and evaluation, as well as nutrition, stress management, social/cultural issues, and substance abuse. Students in both concentrations are exposed to the latest research and practice designed to enhance fitness, wellness, and healthy living, including both laboratory and field experiences. A unique aspect of both degree options in the Exercise and Wellness program is an outstanding internship program that provides preprofessional experience in all segments of fitness, wellness, health promotion, and the allied health professions in metropolitan Phoenix or elsewhere in the country.

Career opportunities range broadly across the several sectors of the industry related to fitness, wellness, health promotion, and the health professions. Those settings include worksite/corporate, clinical/medical, community/educational, and the private/commercial sector. The degree is also ideal preparation for advanced study in health professions such as cardiopulmonary rehabilitation, physical therapy, and athletic training, as well as graduate study in exercise and wellness and public health.

Graduation Requirements

A total of 120 semester hours is required for graduation with a minimum of 45 semester hours of upper-division credit. As part of the undergraduate degree program, students complete ASU General Studies requirements. For a list of courses that meet ASU General Studies requirements, see “General Studies,” page 92.

Exercise and Wellness students are required to complete the following courses:

Required core courses

EXW 300 Foundations of Exercise and Wellness <i>L/SB</i>	3
EXW 310 Computer Skills and Technology for Exercise and Wellness <i>CS</i>	3
EXW 342 Health Behavior Change	3
EXW 450 Cultural and Social Issues in Exercise and Wellness <i>SB, C</i>	3
EXW 484 Exercise and Wellness Internship.....	6
NTR 241 Human Nutrition	3
Total	21

Each EXW core course has specific prerequisite courses that must be taken before taking the respective core course. These prerequisite courses include the following:

BIO 201 Human Anatomy and Physiology I <i>SG</i>	4
BIO 202 Human Anatomy and Physiology II.....	4

L literacy and critical inquiry / **MA** mathematics / **CS** computer/statistics/quantitative applications / **HU** humanities and fine arts / **SB** social and behavioral sciences / **SG** natural science—general core courses / **SQ** natural science—quantitative / **C** cultural diversity in the United States / **G** global / **H** historical / See “General Studies,” page 92.

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CHM 101 Introductory Chemistry <i>SQ</i>	4
or any equivalent chemistry course	
COM 225 Public Speaking <i>L</i>	3
PGS 101 Introduction to Psychology <i>SB</i>	3
Total	18

Exercise and Wellness Concentration. The following EXW courses are required of all students in the exercise and wellness concentration:

EXW 212 Instructional Competency Laboratory	2
EXW 315 Physiological Foundations of Movement	3
EXW 320 Program Development and Leadership.....	3
EXW 330 Kinesiological Foundations of Movement.....	3
EXW 400 Stress Management for Wellness	3
EXW 420 Exercise Testing	3
EXW 425 Exercise Prescription	3
Elective*.....	3
Total	23

* Three semester hours must be selected from an approved list of concentration electives.

Health Promotion Concentration. The following EXW courses are required of all students in the health promotion concentration:

EXW 320 Program Development and Leadership.....	3
EXW 325 Fitness for Life.....	3
EXW 346 Program Evaluation in Health Promotion.....	3
EXW 350 Substance Abuse and Addictive Behavior.....	3
EXW 400 Stress Management for Wellness	3
EXW 442 Physical Activity in Health and Disease <i>L</i>	3
EXW 444 Epidemiology.....	3
Elective*.....	6
Total	27

* Six semester hours must be selected from an approved list of concentration electives.

Teacher Preparation. This concentration is designed for the student interested in a physical education teaching career at the elementary or secondary school level; the concentration is also appropriate for students interested in coaching, youth sports, and recreation.

Required Courses

KIN 361 Physical Education in the Secondary School.....	3
KIN 376 Physical Education for the Elementary School.....	3
KIN 382 Adaptive and Inclusive Physical Education.....	3
Choose from among the courses below	12
KIN 100 Introduction to Health and Wellness <i>SB</i> (3)	
KIN 283 Prevention and Care of Athletic Injuries (3)	
KIN 290 Sports Officiating (3)	
KIN 292 Sports Officiating (3)	
KIN 334 Functional Anatomy and Kinesiology (3)	
KIN 348 Psychological Skills for Optimal Performance <i>SB</i> (3)	
KIN 370 Advanced First Aid (3)	
KIN 400 Teaching Physical Activity Concepts <i>L</i> (3)	
KIN 413 Qualitative Analysis in Sport Biomechanics (3)	
KIN 441 Physiology of Women in Sport <i>L</i> (3)	
KIN 445 Exercise Physiology for Children and Adolescents (3)	
KIN 448 Applied Sport Psychology <i>L</i> (3)	
KIN 460 Theory of Strength Training <i>L</i> (3)	
KIN 484 Internship (6)	

KIN 494 ST: Administration of Athletics (3)	
KIN 494 ST: Research and Teaching in Physical Education (3)	
KIN 494 ST: Sport and Social Issues (3)	

The minor is not open to Kinesiology majors or Secondary Education majors in the College of Education pursuing an academic specialization in physical education.

WELLNESS FOUNDATIONS MINOR

The minor in Wellness Foundations is appropriate for students in the BIS degree program. It consists of the following plus all prerequisite courses:

EXW 300 Foundations of Exercise and Wellness <i>L/SB</i>	3
EXW 325 Fitness for Life.....	3
EXW 342 Health Behavior Change	3
EXW 450 Cultural and Social Issues in Exercise and Wellness <i>SB, C</i>	3
EXW electives*.....	6
Total	18

* Six semester hours must be selected from an approved list of EXW electives. See an advisor for a list of approved electives.

BIS CONCENTRATION

A concentration in wellness foundations is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 124.

APPLIED SCIENCE—BAS

The Bachelor of Applied Science (BAS) degree is a capstone degree for the Associate of Applied Science (AAS) degree. The BAS degree exposes students to advanced concepts and diverse critical thinking skills to prepare them for future career opportunities and professional advancement.

Admission

Admission to the BAS degree program is restricted to students holding an AAS degree from a regionally accredited U.S. postsecondary educational institution. A GPA of 2.00 or higher is required for all resident applicants and 2.50 for nonresident applicants.

BAS Degree Graduation Requirements

The BAS degree program consists of 60 semester hours of upper-division courses, with 30 semester hours in residence. An overall GPA of 2.00 or higher is required.

AAS degree	60
Assignable credit.....	5
BAS core.....	15
Concentration	21
General Studies	19
Total	120

General Studies Curriculum. The BAS curriculum builds on the general education content of the AAS degree. Additional General Studies courses are taken in the core or concentration. General Studies courses focus on contextual learning.

L	3
MA	3
HU	3
HU or SB	3
SB	3
SG	4
Total	19

Assignable Credit. Assignable credit allows space in the curriculum for an internship requirement.

BAS Core

EXW 300 Foundations of Exercise and Wellness <i>L/SB</i>	3
EXW 310 Computer Skills and Technology for Exercise and Wellness <i>CS</i>	3
EXW 320 Program Development and Leadership	3
EXW 325 Fitness for Life	3
EXW 346 Program Evaluation in Health Promotion	3
Total	15

Wellness Concentration. The wellness concentration is designed to prepare professionals in the area of wellness promotion and disease prevention and management.

Wellness Concentration

EXW 342 Health Behavior Change	3
EXW 350 Substance Abuse and Addictive Behavior	3
EXW 400 Stress Management for Wellness	3
EXW 442 Physical Activity in Health and Disease <i>L</i>	3
EXW 444 Epidemiology	3
EXW 450 Cultural and Social Issues in Exercise and Wellness <i>SB, C</i>	3
EXW 300- or 400-level elective	3
Total	21

CERTIFICATE IN SPA MANAGEMENT

The Spa Management Certificate program is a nondegree, 34-semester-hour program designed to prepare students for careers in spa administration. The program was designed and implemented in response to a rapidly growing spa industry, which has identified a real need for more directors, assistant directors, and supervisors, and for management candidates with formal education and training in spa administration. The required courses meet a comprehensive list of core competencies identified by the spa industry and an advisory committee of spa directors. This certificate is recognized by the International Spa Association, and it significantly enhances a graduate’s opportunity for placement and advancement within the industry.

Admission to the certificate program is based on a rubric that includes higher education credits, GPA, work experience, résumé, references, and a letter of intent.

Required Courses

BUA 381 Small Business Accounting and Finance	3
BUA 382 Small Business Sales and Market Development	3
BUA 383 Small Business Working Relationships	3
EXW 325 Fitness for Life	3

EXW 400 Stress Management for Wellness	3
EXW 484 Exercise and Wellness Internship	6
EXW 498 Pro Seminar: Spa Management I	2
HHS 300 Overview of Complementary Health Systems	3
MGT 394 Special Topics	3
NTR 345 Development of Healthy Cuisines	3
WED 165 Overview of Massage Therapy*	2
Total	34

* This course is offered through Chandler-Gilbert Community College.

Students must receive a grade of “C” (2.00) or higher in every course to earn the certificate. Any course in which a student fails to earn a “C” (2.00) or higher must be repeated.

GRADUATE PROGRAMS

The faculty offer programs leading to the MS degree in Exercise and Wellness. The department also participates with the Division of Graduate Studies and College of Education in the program leading to the PhD degree in Curriculum and Instruction with a concentration in exercise and wellness. See the *Graduate Catalog* for requirements.

EXERCISE AND WELLNESS (EXW)

EXW Note 1. A \$5.00 towel and locker fee is required each semester by students using towel and locker facilities for physical activity courses.

EXW Note 2. Physical activity instruction courses (EXW 105, 205, 305) may not be taken for audit. Excessive absences and/or tardiness are considered disruptive behavior.

EXW 100 Introduction to Health and Wellness. (3)

fall and spring
Current concepts in health, exercise, and wellness. Emphasis placed on personal health, theories, attitudes, beliefs, and behaviors. Cross-listed as HES 100/KIN 100. Credit is allowed only for EXW 100 or HES 100 or KIN 100.
General Studies: SB

EXW 105 Physical Activity Instruction: Beginning. (1)

fall, spring, summer
Beginning instruction in a variety of physical activities such as aerobics, aquatics, racquet sports, physical conditioning, and golf. “Y” grade only. May be repeated for credit. 3 hours per week. Activity. Fee. See EXW Notes 1, 2.

EXW 205 Physical Activity Instruction: Intermediate. (1)

fall and spring
Intermediate-level instruction in a variety of physical activities. Continuation of EXW 105. “Y” grade only. May be repeated for credit. 3 hours per week. Activity. Fee. See EXW Notes 1, 2.

EXW 212 Instructional Competency Laboratory. (2)

fall, spring, summer
Methods of instructing and leading fitness activities, including aerobic, resistance, and flexibility activities. May be repeated for credit. Integrated lecture lab. See EXW Note 1. Prerequisite: Exercise and Wellness major.

EXW 215 Physical Activity and Healthy Lifestyles. (1)

fall and spring
Applies principles of physical activity to personal fitness testing and program planning for people of all ages. Telecampus course. Not open to Exercise and Wellness majors or students with credit for EXW 325.

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See “General Studies,” page 92.

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EXW 280 Global Issues in Exercise and Wellness. (3)

spring

Historical overview of health promotion and wellness models as they relate to minority, gender, social, cultural, economic, international, and environmental issues.

General Studies: G

EXW 300 Foundations of Exercise and Wellness. (3)

fall, spring, summer

Analyzes research in various disciplines that contribute to health promotion and wellness.

General Studies: L/SB

EXW 301 Concepts of Fitness and Wellness. (1)

fall and spring

Guidelines for achieving health benefits of physical activity and other healthy lifestyles. Telecampus course. Not open to Exercise and Wellness majors or to students who have credit for EXW 325.

EXW 305 Physical Activity Instruction: Advanced. (1)

fall and spring

Advanced-level instruction in a variety of physical activities. Continuation of EXW 105. May be repeated for credit. "Y" grade only. 3 hours per week. Activity. Fee. See EXW Notes 1, 2.

EXW 310 Computer Skills and Technology for Exercise and Wellness. (3)

spring

Use of computers to statistically analyze data and design presentations of findings. Design of health promotion educational applications and presentations. Integrated lecture/lab. Prerequisite: MAT 117.

General Studies: CS

EXW 311 Special Populations in Exercise and Wellness. (3)

fall

Introduces the challenged population and surveys the agencies that work with special populations.

EXW 315 Physiological Foundations of Movement. (3)

spring

Studies human movement with emphasis on physiological function of the body in response to physical activity and fitness training. Lecture, lab. Fee. Prerequisites: BIO 201, 202.

EXW 320 Program Development and Leadership. (3)

fall

Principles of planning, organizing, promoting, and leading fitness and wellness programs. Prerequisites: COM 225; Exercise and Wellness major.

EXW 325 Fitness for Life. (3)

fall and spring

Physical fitness and benefits of exercise with emphasis on self-evaluation and personalized program planning for a lifetime. Not open to students who have credit for EXW 215 or 301.

EXW 330 Kinesiological Foundations of Movement. (3)

spring

Studies and considers human movement with emphasis on kinesiology principles and their application to movement and fitness. Lecture, lab. Prerequisites: BIO 201, 202.

EXW 342 Health Behavior Change. (3)

fall

Examines major theories of health behavioral change. Develops intervention strategies and techniques employed to facilitate health behavioral change. Prerequisite: PGS 101.

EXW 346 Program Evaluation in Health Promotion. (3)

spring

Introduces and applies theory-based concepts and methods of program evaluation in health promotion. Prerequisite: EXW 320. Pre- or corequisites: EXW 300, 310.

EXW 350 Substance Abuse and Addictive Behavior. (3)

spring

Studies addictive substances, their pharmacology and effects. Psychosocial risk factors for, and consequences of, substance abuse. Lecture, discussion, individual and group study.

EXW 380 Body Image and Wellness. (3)

fall

Explores body image in American culture from physical, psychological, historical, and societal perspectives. Prerequisites: NTR 241; PGS 101.

EXW 400 Stress Management for Wellness. (3)

fall

Examines the stress response and management from a behavioral perspective as it pertains to individuals or groups. Prerequisite: PGS 101.

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.

General Studies: L

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

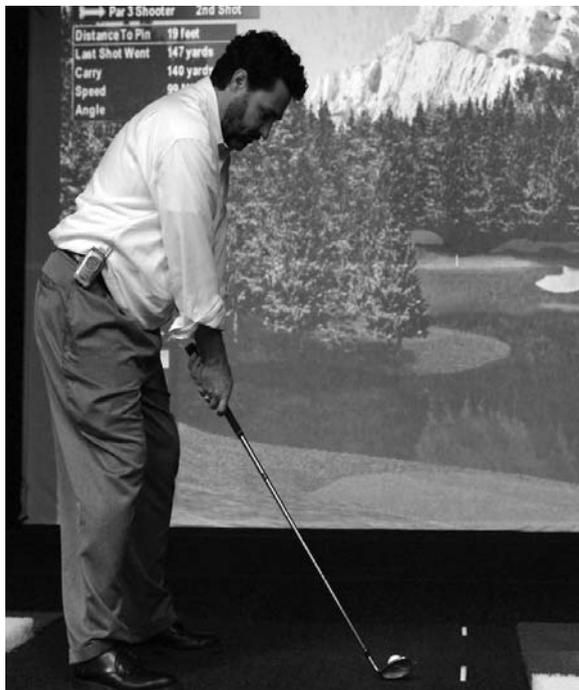
Examines contemporary sociocultural issues and social determinants of health and physical activity. Focuses on health disparities, obesity, and social stressors. Prerequisite: EXW 300.

General Studies: SB, C

EXW 460 Resistance Training Application and Theory. (3)

fall

Fosters critical thinking as it applies to resistance training theory. Pre- or corequisite: EXW 315.



The Morrison School of Agribusiness and Resource Management offers a BS degree in Agribusiness with a concentration in professional golf management.

Tim Trumble photo

EXW 484 Exercise and Wellness Internship. (6)

fall, spring, summer

Supervised practicum experience in approved exercise and wellness/health promotion agencies. Field work. Prerequisites: EXW 315, 320, 420. Pre- or corequisite: EXW 425.

EXW 498 Pro-Seminar. (1–7)

selected semesters

Topics may include the following:

- Spa Management I. (2)

fall and spring

Provides an overview of the spa industry, programs and services typically found in different types of spas, operational systems and procedures, spa equipment and facility issues, financial issues, human resource issues, marketing for spas, computer software for spa operations, and other key administrative competencies specific to the spa industry.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

Faculty of Human Health Studies

www.east.asu.edu/ecollege/humanhealth

480/727-1333

WANNER Third Floor

William L. Mermis, Faculty Head

HUMAN HEALTH STUDIES—BA AND BS

The baccalaureate degrees in human health studies examine the multiple dimensions of human health, including psychological, social, biological, spiritual, economic, and emotional dimensions. Different perspectives on health and health care are examined as well as how those perspectives influence changes in belief structures and behavior. Students engage in a critical examination of the alternative approaches to health care and health promotion.

The degrees in human health studies provide students with the general knowledge and intellectual competencies to pursue many different careers and graduate studies in human services or health professions. Students planning to seek admission to medical school or other postbaccalaureate practitioner training that requires an extensive background in mathematics and science benefit from the BS program.

Graduation Requirements

To graduate with either a BA or a BS in Human Health Studies, students must complete a minimum of 120 semester hours (45 upper-division hours), including the university General Studies requirements. Both the BA and BS degree programs require 45 semester hours of major requirements consisting of a 15 semester hour core of Human Health Studies courses, a 12 semester hour concentration, and 18 semester hours of related course work.

The difference between the BA and BS programs lies in the mathematics and science requirements. Both BA and BS students must take one semester of general biology with a lab and two semesters of human anatomy and physiology with labs. The BS program requires additional mathematics courses (through brief calculus) and the following science courses:

CHM 113 General Chemistry <i>SQ</i>	4
CHM 116 General Chemistry <i>SQ</i>	4
CHM 331 General Organic Chemistry	3
CHM 332 General Organic Chemistry	3
CHM 335 General Organic Chemistry Laboratory.....	1
CHM 336 General Organic Chemistry Laboratory.....	1
PHY 111 General Physics <i>SQ</i> *.....	3
PHY 112 General Physics <i>SQ</i> *.....	3
PHY 113 General Physics Laboratory <i>SQ</i> *.....	1
PHY 114 General Physics Laboratory <i>SQ</i> *.....	1

* Both PHY 111 and 113 or 112 and 114 must be taken to secure *SQ* credit.

HUMAN HEALTH STUDIES (HHS)

HHS 100 Introduction to Holistic Health. (3)

selected semesters

Studies holistic health in a bio-psycho-socio-cultural context for health promotion and wellness.

HHS 194 Special Topics. (1–4)

selected semesters

HHS 294 Special Topics. (1–4)

selected semesters

HHS 300 Overview of Complementary Health Systems. (3)

selected semesters

Identifies and describes major approaches to complementary health models in the context of holistic health. Prerequisite: HHS 100.

HHS 302 Evidence-Based Complementary Health Modalities. (3)

selected semesters

Investigates complementary practices in the context of scholarly knowledge and standards for health care. Prerequisite: HHS 100.

HHS 394 Special Topics. (1–4)

selected semesters

HHS 400 Community-Based Complementary Health Services. (3)

selected semesters

Examines recent developments in community-based health and human services from a holistic perspective. Lecture, service learning. Prerequisite: HHS 100.

HHS 402 Work, Health, and the Family. (3)

selected semesters

Examines issues and programs in the contemporary workplace and society. Future directions for the family and its health.

HHS 403 Community Mental Health and Human Services. (3)

selected semesters

Examines concepts, issues, and programs in community mental health and the delivery of human services.

HHS 405 Seminar in Holistic Health. (3)

selected semesters

Integrates concepts and issues in holistic health within philosophical, historical, political, economic, and cultural frameworks. Prerequisite: HHS 100.

HHS 494 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 63.

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See “General Studies,” page 92.

Faculty of Multimedia Writing and Technical Communication

www.east.asu.edu/ecollege/multimedia

480/727-1515

SUTTON, Third Floor

Barry M. Maid, Faculty Head

Professor: Maid

Associate Professor: Stone

Lecturer: D'Angelo

MULTIMEDIA WRITING AND TECHNICAL COMMUNICATION—BS

In the Multimedia Writing and Technical Communication program, students learn how to produce, to design, and to manage information using both traditional and leading edge technologies. Students

1. learn to communicate, both orally and in writing, across audiences and cultures;
2. become aware of issues of ethics in technical communications;
3. gain an awareness of the global nature of technical communication—both culturally and economically—and develop the ability to evaluate print, oral, and electronic sources;
4. gain an understanding of appropriate technical genres and learn to demonstrate technical editing skills in all work; and
5. become able to incorporate appropriate visual elements and design in written documents and oral presentations and to work in appropriate media.

The program serves students who wish to pursue careers as technical writers, technical editors, Web page and intranet page designers, multimedia designers, desktop publishers, publications managers, and information designers.

GRADUATION REQUIREMENTS

To graduate with a BS degree in Multimedia Writing and Technical Communication, students must complete a minimum of 120 semester hours, including university graduation requirements and the requirements of the major.

Multimedia Writing and Technical Communication Core	
TWC 301 General Principles of Multimedia Writing <i>L</i>	3
TWC 401 Principles of Technical Communication <i>L</i>	3
TWC 411 Principles of Visual Communication <i>L</i>	3
TWC 421 Principles of Writing with Technology <i>L</i>	3
TWC 431 Principles of Technical Editing <i>L</i>	3
TWC 490 Capstone	3
Total	18

Major Electives. Fifteen semester hours are considered electives in the major (TWC). At least six of which need to be in genre courses, such as TWC 443 Proposal Writing or TWC 447 Business Reports. An Internship (TWC 484) or supervised work experience is strongly recommended.

For information about program requirements and courses, access the Web at www.east.asu.edu/ecollege, or call an East College advisor at 480/727-1515.

Related Area. Students select a related area consisting of 12 semester hours of study in one other discipline. At least nine of these 12 semester hours must be in the upper division. Suggested disciplines might be, but are not limited to, applied psychology, business administration, or computer graphics. Students, with the help of an advisor, may also develop a coherent interdisciplinary related area.

BACHELOR OF APPLIED SCIENCE—BAS

A Bachelor of Applied Science is also offered with a concentration in multimedia writing and technical communication. The BAS degree is a “capstone” degree for the Associate of Applied Science degree. The BAS degree exposes students to advanced concepts and diverse critical thinking skills that prepare them for future career opportunities and professional advancement.

Admission. Admission to the BAS degree program is restricted to students holding an AAS degree or equivalent from a regionally accredited U.S. postsecondary educational institution. A GPA of 2.00 or higher is required for all resident applicants and a 2.50 for nonresident applicants.

Degree Requirements. In addition to the AAS degree, the BAS in Applied Science through East College consists of 60 semester hours of upper-division (300-level and above) courses, with 30 semester hours in residence.

Assignable credit	6
BAS core	15
General Studies	19
MWTC concentration	20
Total	60

General Studies Curriculum. The BAS curriculum builds on the general education content of the AAS degree. Additional General Studies (L, CS, and awareness areas) are met with courses in the core or concentration. General Studies courses focus on contextual learning.

L	3
MA	3
HU	3
HU or SB	3
SB	3
SG	4
Total	19

Assignable Credit. Assignable credit offers students the flexibility within the curriculum to take the prerequisite courses needed for success. The courses (six semester hours) are determined by the student and an advisor.

BAS Core. The area core (15 semester hours) is focused on management and organization, professional communication, qualitative analysis, and computer competency.

Multimedia Writing and Technical Communication Concentration. In consultation with an advisor, students select 20 semester hours of upper-division TWC courses.

CERTIFICATE PROGRAMS

An undergraduate Multimedia Writing and Technical Communication Certificate is available and requires 18 semester hours.

For students who have already completed a baccalaureate degree, a Postbaccalaureate Certificate in Multimedia Writing and Technical Communication is available that also requires 18 semester hours.

Postbaccalaureate Certificate in Multimedia Writing and Technical Communication. The postbaccalaureate certificate in Multimedia Writing and Technical Communication requires the following courses:

TWC 501 Principles of Technical Communication	3
Two of the following courses	6
TWC 511 Principles of Visual Communication (3)	
TWC 521 Principles of Writing with Technology (3)	
TWC 531 Principles of Technical Editing (3)	
Three 500-level TWC courses at least two of which must be genre courses, such as TWC 543 Proposal Writing or TWC 547 Business Reports	9
Total	18

For more information about both certificate programs, call an East College advisor at 480/727-1515, or access the Web site at www.east.asu.edu/ecollege/multimedia.

BIS CONCENTRATION

A concentration in multimedia writing and technical communication is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 124.

MULTIMEDIA WRITING AND TECHNICAL COMMUNICATION (TWC)

TWC 194 Special Topics. (1–4)
selected semesters

TWC 200 Impact of Communications Technology on Society. (3)
fall and spring
Organizational issues and development of technical communication. Activities include research, evaluations, and presentation of oral arguments in support of positions. Prerequisites: both ENG 101 and 102 or only ENG 105.
General Studies: L

TWC 301 General Principles of Multimedia Writing. (3)
fall and spring
Introduces writing in a variety of media, understanding the consequences of integrating media, and effective editing techniques. Prerequisite: First-Year Composition.
General Studies: L

TWC 351 Technical Writing and Editing. (3)
fall and spring
Effective style, format, and organization of technical material; editing principles and practices; copyediting versus substantive editing; and document management. Prerequisite: ENG 102.

TWC 400 Technical Communications. (3)
fall, spring, summer
Planning and preparing technical publications and oral presentations based on directed library research related to current technical topics. Prerequisites: completion of first-year English requirements; a General Studies L course; senior standing with a major in College of Technology and Applied Sciences.
General Studies: L

TWC 401 Principles of Technical Communication. (3)
fall and spring
Basic information design principles to produce effective written, oral, and electronic technical communication. Understanding of rhetorical and audience analysis. Pre- or corequisite: TWC 301.
General Studies: L

TWC 403 Writing for Professional Publication. (3)
selected semesters
Analyzes the market and examines the publication process, including the roles of the author, editor, and reviewer. Pre- or corequisite: TWC 401.

TWC 411 Principles of Visual Communication. (3)
fall and spring
Basic principles of visual communication in print and electronic media. Understanding graphic and document design, including typography and color. Pre- or corequisite: TWC 401.
General Studies: L

TWC 421 Principles of Writing with Technology. (3)
fall and spring
Understanding historical and social impact of technology on writing, with emphasis on multimedia design, computer-mediated communication, and hypertext. Pre- or corequisite: TWC 401.
General Studies: L

TWC 431 Principles of Technical Editing. (3)
fall and spring
Basic principles of technical editing (for print and electronic media), including copyediting, reviews, standards, style, and project management. Pre- or corequisite: TWC 401.
General Studies: L

TWC 443 Proposal Writing. (3)
once a year
Develops persuasive strategies and themes for researching and writing professional proposals. Pre- or corequisite: TWC 401.

TWC 444 Manual and Instructional Writing. (3)
once a year
Design and development of a user manual, writing instructions, improving graphics and page design, and usability testing. Pre- or corequisite: TWC 401.

TWC 445 Computer Documentation. (3)
once a year
Introduces writing documentation for the computer industry. Pre- or corequisite: TWC 401.

TWC 446 Technical and Scientific Reports. (3)
once a year
Introduces strategies, formats, and techniques of presenting information to technical and scientific audiences. Pre- or corequisite: TWC 401.
General Studies: L

TWC 447 Business Reports. (3)
once a year
Introduces strategies, formats, and techniques of presenting information to business and other workplace audiences. Pre- or corequisite: TWC 401.
General Studies: L

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See “General Studies,” page 92.

EAST COLLEGE

TWC 451 Copyright and Intellectual Property in the Electronic Age. (3)

fall

Explores issues related to copyright and intellectual property laws, with emphasis on electronic environment. Credit is allowed for only TWC 451 or 551.

TWC 452 Information in the Digital Age. (3)

spring

Explores the creation, organization, dissemination, and use of information; the impact of technologies; and surrounding economic, legal, and social issues. Credit is allowed for only TWC 452 or 552.

TWC 484 Internship. (3)

fall and spring

Applies classroom work in a supervised workplace environment. Pre- or corequisite: TWC 411 or 421 or 431.

TWC 490 Capstone. (3)

fall and spring

Development of a professional portfolio, creation of a "culminating document," and synthesis of undergraduate experience. Prerequisite: instructor approval.

TWC 494 Special Topics. (1–4)

selected semesters

TWC 501 Principles of Technical Communication. (3)

fall and spring

Basic information design principles to produce effective written, oral, and electronic technical communication. Understanding of rhetorical and audience analysis. Pre- or corequisite: graduate standing.

TWC 503 Writing for Professional Publication. (3)

selected semesters

Analyzes the market and examines the publication process, including the roles of the author, editor, and reviewer. Pre- or corequisite: TWC 501.

TWC 511 Principles of Visual Communication. (3)

fall and spring

Basic principles of visual communication in print and electronic media. Understanding graphic and document design, including typography and color. Pre- or corequisite: TWC 501.

TWC 521 Principles of Writing with Technology. (3)

fall and spring

Understanding historical and social impact of technology on writing, with emphasis on multimedia design, computer-mediated communication, and hypertext. Pre- or corequisite: TWC 501.

TWC 531 Principles of Technical Editing. (3)

fall and spring

Basic principles of technical editing for print and electronic media, including copyediting, reviews, standards, style, and project management. Pre- or corequisite: TWC 501.

TWC 543 Proposal Writing. (3)

once a year

Develops persuasive strategies and themes for researching and writing professional proposals. Pre- or corequisite: TWC 501.

TWC 544 Manual and Instructional Writing. (3)

once a year

Design and development of a user manual, writing instructions, improving graphics and page design, and usability testing. Pre- or corequisite: TWC 501.

TWC 545 Computer Documentation. (3)

once a year

Introduces writing documentation for the computer industry. Pre- or corequisite: TWC 501.

TWC 546 Technical and Scientific Reports. (3)

once a year

Introduces strategies, formats, and techniques of presenting information to technical and scientific audiences. Pre- or corequisite: TWC 501.

TWC 547 Business Reports. (3)

once a year

Introduces strategies, formats, and techniques of presenting information to business and other workplace audiences. Pre- or corequisite: TWC 501.

TWC 551 Copyright and Intellectual Property in the Electronic Age. (3)

fall

Explores issues related to copyright and intellectual property laws, with emphasis on electronic environment. Credit is allowed for only TWC 551 or 451.

TWC 552 Information in the Digital Age. (3)

spring

Explores the creation, organization, dissemination, and use of information; the impact of technologies; and surrounding economic, legal, and social issues. Credit is allowed for only TWC 552 or 452.

TWC 584 Internship. (3)

fall and spring

Applies classroom work in a supervised workplace environment. Pre- or corequisites: TWC 511, 521, 531.

TWC 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 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see "Graduate-Level Courses," page 62.

Department of Nutrition

www.east.asu.edu/ecollege/nutrition

480/727-1728

HSC 1386

Linda A. Vaughan, Chair

Professors: Johnston, Vaughan

Associate Professor: Hampl

Assistant Professors: Hutchins, Winham, Woolf

Lecturers: Dixon, Hall, Shepard

NUTRITION—BS

The BS degree in Nutrition offers four concentrations: dietetics, food and nutrition management, human nutrition, and nutrition communication.

The dietetics concentration provides students with a comprehensive range of nutrition, foods, and science courses that meet the academic (didactic) requirements necessary to become a registered dietitian. This concentration has been granted full accreditation as a Didactic Program in Dietetics (DPD) by the Commission on Accreditation for Dietetics Education of the American Dietetic Association. Graduates of a DPD may apply for Dietetic Internships to establish eligibility to write the Dietetic Registration examination.

The food and nutrition management concentration provides a number of nutrition, foods, and business courses and is offered to students with an interest in food production, nutrition program management, and food/nutrition marketing.

The human nutrition concentration provides a sound foundation in the basic sciences and nutrition, but no food service courses are required. This program is often used by students who, while not seeking the credential of Registered Dietitian, are working toward a career in nutrition research or completing a premedical/pre dental program of study.

The nutrition communication concentration provides a strong core of nutrition and communication courses in conjunction with selected science and food related courses. This program is ideal for students with an interest in freelance writing or public relations.

Accreditation. The BS degree in Nutrition with a concentration in dietetics has been granted full accreditation as a Didactic Program in Dietetics (DPD) by the Commission on Accreditation for Dietetics Education of the American Dietetic Association. For more information, call 312/899-0040, or write

COMMISSION ON ACCREDITATION FOR
DIETETICS EDUCATION
AMERICAN DIETETIC ASSOCIATION
120 S RIVERSIDE PLAZA SUITE 2000
CHICAGO IL 60606-6995

Dietetics Concentration. The following NTR courses are required of all students in the dietetics concentration:

NTR 142 Applied Food Principles	3
NTR 150 Introduction to Professions in Nutrition and Dietetics.....	1
NTR 241 Human Nutrition	3
NTR 340 Applications in Human Nutrition.....	3
NTR 341 Introduction to Planning Therapeutic Diets	3
NTR 343 Food Service Purchasing.....	3
NTR 344 Nutrition Services Management <i>L</i>	3
NTR 350 Nutrition Counseling <i>SB</i>	3
NTR 400 Preprofessional Preparation in Dietetics	3
NTR 440 Advanced Human Nutrition I.....	3
NTR 441 Advanced Human Nutrition II	3
NTR 444 Medical Nutrition Therapy.....	3
NTR 445 Management of Food Service Systems.....	3
NTR 446 Human Nutrition Assessment Lecture/Laboratory	3
NTR 448 Community Nutrition <i>L</i>	3
Total	43

In addition to the required NTR courses, the following related courses are required to complete the academic requirements of the Didactic Program in dietetics:

BCH 361 Principles of Biochemistry.....	3
BCH 367 Elementary Biochemistry Laboratory	1
BIO 201 Human Anatomy and Physiology I <i>SG</i>	4
BIO 202 Human Anatomy and Physiology II.....	4
CHM 113 General Chemistry <i>SQ</i>	4
CHM 116 General Chemistry <i>SQ</i>	4
CHM 231 Elementary Organic Chemistry <i>SQ</i> ¹	3
CHM 235 Elementary Organic Chemistry Laboratory <i>SQ</i> ¹	1
MIC 205 Microbiology <i>SG</i> ²	3
MIC 206 Microbiology Laboratory <i>SG</i> ²	1
Statistics course.....	3
Technical writing course.....	3
Total	34

¹ Both CHM 231 and 235 must be taken to secure *SQ* credit.

² Both MIC 205 and 206 must be taken to secure *SG* credit.

Additional supporting courses in the social sciences are required for completion of the DPD and must be selected in consultation with the Nutrition academic advisor.

Food and Nutrition Management Concentration. The following NTR courses are required of all students in the food and nutrition management concentration:

NTR 100 Introductory Nutrition.....	3
or NTR 241 Human Nutrition (3)	
NTR 142 Applied Food Principles	3
NTR 300 Computer Applications in Nutrition <i>CS</i>	3
NTR 343 Food Service Purchasing.....	3
NTR 344 Nutrition Services Management <i>L</i>	3
NTR 345 Development of Healthy Cuisines	3
NTR 351 Nutrition and Health Communications	3
NTR 401 Professional Practice in Food Service Management.....	3
NTR 445 Management of Food Service Systems.....	3
Total	27

Three more semester hours from the Department of Nutrition are required to complete this concentration. A maximum of three semester hours of Independent Study may be used to satisfy this requirement. Students select these courses in consultation with the Nutrition academic advisor.

In addition to the required NTR courses, the following related courses are required to complete the academic requirements of this concentration:

CHM 101 Introductory Chemistry <i>SQ</i>	4
MIC 205 Microbiology <i>SG</i> ¹	3
MIC 206 Microbiology Laboratory <i>SG</i> ¹	1
Business or technical writing course.....	3
Management (AGB 310; BUS 301; COB 380; MGT 300, 380, or 394)	3
Marketing (AGB 320; COB 382; MKT 300 or 394)	3
Other agribusiness or business courses ²	6
Total	23

¹ Both MIC 205 and 206 must be taken to secure *SG* credit.

² Courses taken to fulfill the final six credit business requirement should be taken from the following prefixes: ACC, AGB, BUS, CIS, COB, CSE, ECN, FIN, HSA, IBS, MGT, MKT, QBA, SCM, and TWC. Students select these courses in consultation with the Nutrition academic advisor.

Human Nutrition Concentration. The following NTR courses are required of all students in the human nutrition concentration:

NTR 142 Applied Food Principles	3
NTR 241 Human Nutrition	3
NTR 340 Applications in Human Nutrition.....	3
NTR 341 Introduction to Planning Therapeutic Diets	3
NTR 440 Advanced Human Nutrition I.....	3
NTR 441 Advanced Human Nutrition II	3
NTR 444 Medical Nutrition Therapy.....	3
NTR 446 Human Nutrition Assessment Lecture/Laboratory	3
Total	24

L literacy and critical inquiry / *MA* mathematics / *CS* computer/statistics/quantitative applications / *HU* humanities and fine arts / *SB* social and behavioral sciences / *SG* natural science—general core courses / *SQ* natural science—quantitative / *C* cultural diversity in the United States / *G* global / *H* historical / See "General Studies," page 92.

EAST COLLEGE

An additional six semester hours from the Department of Nutrition are required to complete this concentration. A maximum of three semester hours of Independent Study may be used to satisfy this requirement. Students select these courses in consultation with the Nutrition academic advisor.

In addition to the required NTR courses, the following related courses are required in order to complete the academic requirements of this concentration:

BCH 361 Principles of Biochemistry.....	3
BCH 367 Elementary Biochemistry Laboratory.....	1
BIO 201 Human Anatomy and Physiology I <i>SG</i>	4
BIO 202 Human Anatomy and Physiology II.....	4
CHM 113 General Chemistry <i>SQ</i>	4
CHM 116 General Chemistry <i>SQ</i>	4
CHM 231 Elementary Organic Chemistry <i>SQ</i> ¹	3
CHM 235 Elementary Organic Chemistry Laboratory <i>SQ</i> ¹	1
MIC 205 Microbiology <i>SG</i> ²	3
MIC 206 Microbiology Laboratory <i>SG</i> ²	1
Total.....	28

¹ Both CHM 231 and 235 must be taken to secure SQ credit.

² Both MIC 205 and 206 must be taken to secure SG credit.

Nutrition Communication Concentration. The following NTR courses are required of all students in the nutrition communication concentration:

NTR 100 Introductory Nutrition.....	3
or NTR 241 Human Nutrition (3)	
NTR 142 Applied Food Principles.....	3
NTR 300 Computer Applications in Nutrition <i>CS</i>	3
NTR 345 Development of Healthy Cuisines.....	3
NTR 348 Cultural Aspects of Food <i>SB, C</i>	3
NTR 351 Nutrition and Health Communications.....	3
NTR 400 Preprofessional Preparation in Dietetics.....	3
or NTR 401 Professional Practice in Food Service Management (3)	
NTR 448 Community Nutrition <i>L</i>	3
NTR 450 Nutrition in the Life Cycle I <i>SB</i>	3
or NTR 451 Nutrition in the Life Cycle II (3)	
Total.....	27

In addition to the required NTR courses, the following related courses are required to complete the academic requirements of this concentration:

Mass Communication Core

(18 credits required, nine must be upper-division, nine must be in residence at ASU:

MCO 110 Introduction to Mass Communication <i>SB</i>	3
or MCO 120 Media and Society <i>SB</i> (3)	
JMC 201 Journalism Newswriting <i>L</i>	3
or JMC 202 Radio-Television Writing <i>L</i> (3)	
JMC 270 Public Relations Techniques.....	3
Total.....	9

At least three more courses must be completed from the following list for a total of nine credits:

JMC 425 Online Media.....	3
JMC 445 Science Writing.....	3
MCO 418 History of Mass Communication <i>SB, H</i>	3
MCO 430 International Mass Communication <i>G</i>	3
MCO 435 Emerging Media Technologies.....	3

MCO 440 Applied Media Research.....	3
MCO 450 Visual Communication <i>HU</i>	3
MCO 456 Political Communication <i>SB</i>	3
MCO 460 Race, Gender, and Media <i>C</i>	3
MCO 494 Special Topics.....	3

Additional Requirements

BIO 201 Human Anatomy and Physiology I <i>SG</i>	4
BIO 202 Human Anatomy and Physiology II.....	4
CHM 101 Introductory Chemistry <i>SQ</i>	4
ENG 301 Writing for the Professions <i>L</i>	4
Statistics (see advisor for a list of courses).....	3
Total.....	19

MINORS

The faculty of the Department of Nutrition also offers minors in Food and Nutrition Management and Human Nutrition, each requiring 18 semester hours. At least 12 of the 18 must be in upper-division courses.

Food and Nutrition Management. The minor requires that students take the following courses:

NTR 100 Introductory Nutrition.....	3
or NTR 241 Human Nutrition (3)	
NTR 142 Applied Food Principles.....	3
NTR 300 Computer Applications in Nutrition <i>CS</i>	3
NTR 343 Food Service Purchasing.....	3
NTR 344 Nutrition Services Management <i>L</i>	3
NTR 445 Management of Food Service Systems.....	3
Total.....	18

Human Nutrition. The minor requires that students take the following courses:

NTR 241 Human Nutrition.....	3
NTR 340 Applications in Human Nutrition.....	3
NTR 341 Introduction to Planning Therapeutic Diets.....	3
NTR 440 Advanced Human Nutrition I.....	3
NTR 441 Advanced Human Nutrition II.....	3
NTR 444 Medical Nutrition Therapy.....	3
Total.....	18

Additional upper-division (or graduate) courses may be selected from among the following:

NTR 346 Sports Nutrition.....	3
NTR 348 Cultural Aspects of Food <i>SB/C</i>	3
NTR 350 Nutrition Counseling <i>SB</i>	3
NTR 351 Nutrition and Health Communications.....	3
NTR 446 Human Nutrition Assessment Lecture/Laboratory.....	3
NTR 448 Community Nutrition <i>L</i>	3
NTR 450 Nutrition in the Life Cycle I <i>SB</i>	3
NTR 451 Nutrition in the Life Cycle II.....	3

BIS CONCENTRATIONS

Concentrations in (1) food and nutrition management and (2) human nutrition are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see "School of Interdisciplinary Studies," page 124.

APPLIED SCIENCE—BAS

Food Service Management Concentration. The BAS degree with a concentration in food service management is designed to complement and enhance the educational preparation of students holding an AAS degree from a regionally accredited U.S. postsecondary educational institution. The concentration is particularly designed for students holding an AAS degree in culinary or hospitality science. The degree prepares students for careers in food production, service, management, and marketing. With additional education and/or professional training, students may also become credentialed as certified dietary managers, school food service and nutrition specialists, or registered sanitarians.

Admission. Admission to the BAS degree program is restricted to students holding an AAS degree from a regionally accredited U.S. postsecondary educational institution. A GPA of 2.00 or higher is required for all resident applicants and a 2.50 is required for nonresident applicants.

Degree Requirements. The BAS degree consists of 60 semester hours of upper-division (300 level and above) courses, with 30 hours in residence. A total of 120 semester hours are required for graduation.

AAS degree.....	60
Assignable credit.....	6
BAS core.....	15
General Studies.....	19
Concentration.....	20
Total.....	120

General Studies Curriculum. The BAS curriculum builds on the general education content of the AAS degree. Additional General Studies (L, CS, and awareness areas) are met with courses in the core or concentration. General Studies courses focus on contextual learning.

L.....	3
MA.....	3
HU.....	3
HU/SB.....	3
SB.....	3
SG.....	4
Total.....	19

Required Core Courses

NTR.....	300	Computer Applications in Nutrition	CS	3
NTR 343		Food Service Purchasing.....		3
NTR 344		Nutrition Services Management	L.....	3
NTR 345		Development of Healthy Cuisines.....		3
NTR 348		Cultural Aspects of Food	SB, C.....	3
NTR 401		Professional Practice in Food Service Management.....		3
NTR 445		Management of Food Service Systems.....		3
Marketing course.....				3
NTR electives.....				6
Statistics course.....				3
Technical communications course.....				3
Total.....				36

Assignable Credit. Assignable credit offers students the flexibility within the curriculum to take the prerequisite courses needed for success. It also allows students to take additional technical electives. The courses are determined by the student and the advisor.

NUTRITION (NTR)

NTR 100 Introductory Nutrition. (3)

fall, spring, summer

Basic concepts of human nutrition. Recent controversies in nutrition and how food choices affect personal health.

NTR 142 Applied Food Principles. (3)

fall and spring

Applied scientific principles of food preparation and production. 2 hours lecture, 3 hours lab. Fee.

NTR 150 Introduction to the Professions in Nutrition and Dietetics. (1)

fall and spring

Introduces the professions of nutrition and dietetics; their history, practice, and future; credentials, ethics, and standards of practice.

NTR 241 Human Nutrition. (3)

fall, spring, summer

Principles of human nutrition. Emphasizes nutrient metabolism and the relationships between diet and disease. Prerequisite: CHM 101 (or its equivalent).

NTR 300 Computer Applications in Nutrition. (3)

spring

Introduces nutrition and food software, including dietary assessment and analysis, food inventory and control, and telecommunications. Integrated lecture/lab. Prerequisites: NTR 100 (or 241), 341 strongly recommended; basic computer literacy.

General Studies: CS

NTR 340 Applications in Human Nutrition. (3)

spring

Applications of nutrient metabolism through case studies and product evaluations; special topics in human nutrition. Prerequisites: BIO 201; NTR 241. Corequisite: BIO 202.

NTR 341 Introduction to Planning Therapeutic Diets. (3)

fall and summer

Cultural, health, and economic aspects of planning therapeutic diets. Assessments of food and diet composition. Reviews common therapeutic diets. Credit is allowed for only NTR 341 or 345. Fee. Prerequisite: NTR 100 or 241 (or their equivalents).

NTR 343 Food Service Purchasing. (3)

fall

Introduces purchasing systems, bid processes, receiving and storage procedures, and regulatory agencies involved in the food service industry. Prerequisite: NTR 142.

NTR 344 Nutrition Services Management. (3)

fall and spring

Organization, administration, and management of food and nutrition services in hospitals and other institutions. Possible field trips. Prerequisite: NTR 100 or 241 (or its equivalent).

General Studies: L

NTR 345 Development of Healthy Cuisines. (3)

fall

Principles and applications of nutrition and medical nutrition therapy; development of healthy cuisines in health and disease states. Credit is allowed for only NTR 345 or 341. Prerequisite: NTR 100 or 241 or instructor approval.

NTR 346 Sports Nutrition. (3)

fall and summer

Nutritional needs of recreational and elite athletes; energy balance; nutrient metabolism during activity; fluid-electrolyte regulation; evaluation of ergogenic supplements. Prerequisites: BIO 202; NTR 241.

NTR 348 Cultural Aspects of Food. (3)

spring and summer

Origins, development, and diversity of food preferences and dietary habits; food patterns and attitudes of global populations and U.S. immigrants. Prerequisite: NTR 100 or 241 (or its equivalent).

General Studies: SB, C

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See "General Studies," page 92.



East campus students enjoy small class sizes and work in fully equipped laboratories.

Tim Trumble photo

NTR 350 Nutrition Counseling. (3)

spring

Counseling techniques in nutrition; interpersonal and communication skills in clinical and community sites; nutrition education for individuals and populations. Integrated lecture/lab. Prerequisites: NTR 100 (or 241) and 341 (or their equivalents).

General Studies: SB

NTR 351 Nutrition and Health Communications. (3)

fall

Approaches of nutrition and health communications; development of nutrition and health communication materials for selected target audiences. Prerequisite: NTR 100 or 241.

NTR 400 Preprofessional Preparation in Dietetics. (3)

fall and spring

Applies academic knowledge in field practicum; aspects of professional development. Lecture, practicum. Prerequisites: NTR 341, 440 (or 441 or 444); senior standing in dietetics or human nutrition.

NTR 401 Professional Practice in Food Service Management. (3)

spring

Applies academic knowledge in food service management to field practicum; develops practical skills in planning, purchasing, production, management. Lecture, practicum. Prerequisites: NTR 343; senior standing in food and nutrition management. Pre- or corequisite: NTR 344.

NTR 440 Advanced Human Nutrition I. (3)

fall

Metabolic reactions and interrelationships of vitamins, minerals, and water. Prerequisites: BIO 201; NTR 241. Corequisite: BIO 202.

NTR 441 Advanced Human Nutrition II. (3)

spring

Metabolic reactions and interrelationships of carbohydrate, lipid, and protein. Prerequisites: BCH 361 and BIO 202 and NTR 241 (or their equivalents).

NTR 442 Experimental Foods. (3)

selected semesters

Food product development techniques, food evaluation and testing, and investigation of current research into food composition. 2 hours lecture, 3 hours lab. Fee. Prerequisites: CHM 231; NTR 142.

NTR 444 Medical Nutrition Therapy. (3)

spring and summer

Principles of medical nutrition therapy for prevention and treatment of disease and promotion of health. Prerequisites: BIO 201 and 202 and NTR 341 (or their equivalents). CHM 231 strongly recommended.

NTR 445 Management of Food Service Systems. (3)

fall and spring

Standardized methods of quantity food preparation, operation of institutional equipment, institutional menu planning, quantity food experiences. Integrated lecture/lab. Fee. Prerequisites: NTR 142 and 344 (or their equivalents).

NTR 446 Human Nutrition Assessment Lecture/Laboratory. (3)

fall and spring

Clinical and biochemical evaluation of nutritional status. 2 hours lecture, 3 hours lab. Fee. Prerequisites: BCH 361, 367; NTR 440 (or 441).

NTR 448 Community Nutrition. (3)

fall and spring

Food-related behaviors; organization and delivery of nutrition services; program design, implementation, and evaluation strategies; nutrition assessment of populations. Prerequisite: NTR 241 (or its equivalent).

General Studies: L

NTR 450 Nutrition in the Life Cycle I. (3)

fall

Emphasizes nutritional needs and problems during pregnancy, lactation, infancy, and childhood. Prerequisite: NTR 100 or 241 (or its equivalent).

General Studies: SB

NTR 451 Nutrition in the Life Cycle II. (3)

spring

Nutritional needs and problems of adults, particularly the elderly. Prerequisite: NTR 100 or 241 (or its equivalent).

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 63.

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the *Graduate Catalog*, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see "Graduate-Level Courses," page 62.