East College Baccalaureate Degrees and Majors

Major	Degree	Concentration	Administered By
Applied Biological Sciences	B.S.	Applied biological sciences, applied biological sciences/secondary education, ecological restoration, urban horticulture, wildlife habitat management	East College
Applied Psychology	B.S.	—	East College
Applied Science	B.A.S.	Food service management, multimedia writing and technical communication	East College
Business Administration	B.S.	—	East College
Elementary Education	B.A.E.	—	East College
Exercise and Wellness	B.S.	Exercise and wellness, health promotion	Department of Exercise and Wellness
Human Health Studies	B.A., B.S.	—	East College
Interdisciplinary Studies	B.I.S.	See the "B.I.S. Concentrations" table, page 118.	Bachelor of Interdisciplinary Studies Advisory Committee
Multimedia Writing and Technical Communication	B.S.	—	East College
Nutrition	B.S.	Dietetics, food and nutrition management, human nutrition	Department of Nutrition

INTERDISCIPLINARY STUDIES—B.I.S.

The Bachelor of Interdisciplinary Studies (B.I.S.) 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 B.I.S. program take an active role in creating their educational plans and defining their career goals. The B.I.S. 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 B.I.S. as their major in East College at ASU East take their core courses and at least one concentration through ASU East. The second concentration may be taken at ASU Main or ASU East. The B.I.S. core courses are offered by East College. Concentrations at ASU East 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 B.I.S. program should arrange an appointment with an East College advisor at 480/727-1333 before declaring the B.I.S. major.

Basic Requirements

The B.I.S. 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" or higher.

Core Courses

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

For course descriptions, see "Bachelor of Interdisciplinary Studies," page 117.

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.

Declaring the B.I.S. Major

Students must receive approval from an East College advisor before declaring the B.I.S. 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" before enrolling in BIS 301; and

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 85.

East College Graduate Degrees and Majors

Major	Degree	Concentration	Administered By
Applied Psychology	M.S.	—	East College
Curriculum and Instruction*	Ph.D.	Exercise and wellness education	Interdisciplinary Committee on Curriculum and Instruction
Environmental Design and Planning*	Ph.D.	Design; history, theory and criticism; planning	Committee on Environmental Design and Planning
Environmental Resources	M.S.	GIS/remote sensing, natural resource management, range ecology	Department of Applied Biological Sciences
Exercise and Wellness	M.S.	—	Department of Exercise and Wellness
Nutrition	M.S.	—	Department of Nutrition

* Doctoral courses for this interdisciplinary program administered by ASU Main are offered at ASU East.

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-B.I.S. 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" 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.

Applied Biological Sciences

480/727-1515
CNTR 92

Ward W. Brady, Faculty Head

Professors: Brady, Brock, Ohmart

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

APPLIED BIOLOGICAL SCIENCES—B.S.

The B.S. degree in Applied Biological Sciences is designed to prepare professionals and scholars for careers in the biological sciences. Because of the large diversity of career options available in this field, five concentrations are offered:

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

The goal of the program is to ensure that all students know basic biological principles and the supporting sciences appropriate to each concentration. Concentrations are designed to be flexible to allow students to pursue specialized interests.

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.

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 85. It is strongly recommended that students work with an 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 Biology Core	
ABS 350 Applied Statistics *CS*	3
BIO 187 General Biology I *SG*	4
BIO 188 General Biology II *SQ*	4
MAT 210 Brief Calculus *MA*	3
Total	14

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

Applied Biological Sciences Concentration

The applied biological sciences concentration provides a general background in the biological sciences and associated sciences. This concentration is appropriate for students seeking an education rich in the liberal arts. It is designed to

provide maximum flexibility to meet specific student interests. Students intending to pursue research careers in biology and postgraduate studies may also 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 required.

Applied Biological Sciences Concentration Requirements

Choose between the course combinations below 7–8
- ABS 207 Applied Plant Taxonomy (3)
- PLB 308 Plant Physiology (4)

— *or* —

- ABS 355 Vertebrate Zoology (4)
- BIO 360 Animal Physiology (3)
- BIO 361 Animal Physiology Laboratory (2)

— *or* —

- BIO 201 Human Anatomy and Physiology I *SG* (4)
- BIO 202 Human Anatomy and Physiology II (4)

Choose between the course combinations below 4
- ABS 225 Soils (3)
- ABS 226 Soils Laboratory (1)

— *or* —

- MIC 205 Microbiology *SG* (3)
- MIC 206 Microbiology Laboratory *SG* (1)

BIO 340 General Genetics 4
CHM 113 General Chemistry *SQ* 4
CHM 116 General Chemistry *SQ* 4
Choose between the course combinations below 4–8
- CHM 231 Elementary Organic Chemistry *SQ* (3)
- CHM 235 Elementary Organic Chemistry Laboratory *SQ* (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)

Two courses chosen from the following list 6
- ABS 150 Environmental Conservation (3)
- ABS 370 Ecology: Individuals, Populations, and Communities (3)
- EXW 300 Foundations of Exercise and Wellness *L/SB* (3)
- NTR 241 Human Nutrition (3)
- PGS 101 Introduction to Psychology *SB* (3)

Total 33–38

Note: A course cannot be used both in the concentration and a minor.

Complete one block of courses in: applied psychology, ecology, exercise and wellness, human nutrition, or wildlife.

Applied Psychology

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 courses 9
Total 22

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

Ecology

ABS 372 Ecology: Ecosystems and Landscapes 3
ABS 376 Wildlife Ecology 3
or ABS 434 Soil Ecology (3)
ABS 402 Vegetation and Wildlife Measurement 3
or ABS 435 Ecological Modeling (3)
Approved upper-division ecology electives 9
Total 18

Exercise and Wellness

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

Human Nutrition

NTR 100 Introductory Nutrition 3
or NTR 241 Human Nutrition (3)
NTR 142 Applied Food Principles 3
NTR 300 Computer Applications in Nutrition *CS* 3
NTR 343 Food Service Purchasing 3
NTR 344 Nutrition Services Management *L* 3
NTR 401 Professional Practice in Food Service Management 3
NTR 445 Quantity Food Production 3
Total 21

Wildlife

Choose between the course combinations below 3–6
- ABS 374 Introduction to Wildlife Management (3)

— *or* —

- ABS 375 Conservation Biology (3)
- ABS 376 Wildlife Ecology (3)

ABS 470 Mammalogy 3
or ABS 471 Ornithology (3)
Choose between the course combinations below 3–6
- ABS 475 Habitat Management for Small Wildlife (3)

— *or* —

- ABS 476 Big Game Habitat Management (3)
- ABS 480 Ecosystem Management and Planning *L* (3)

Approved elective 3
Total 12–18

General Electives

General electives 9–14

Students planning on attending professional programs after graduation should include these courses as electives:

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 85.

BCH 361 Principles of Biochemistry 3
PHY 111 General Physics *SQ** 3
PHY 112 General Physics *SQ** 3
PHY 113 General Physics Laboratory *SQ** 1
PHY 114 General Physics Laboratory *SQ** 1

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

Note: If General Studies courses are carefully chosen with assistance from an advisor, then up to an additional 14 semester hours of electives are available.

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 Concentration," page 611, for application requirements.

Applied Biological Sciences/Secondary Education Concentration Requirements

ABS 150 Environmental Conservation 3
ABS 207 Applied Plant Taxonomy 3
ABS 355 Vertebrate Zoology 4
ABS 370 Ecology: Individuals, Populations, and Communities .. 3
BIO 201 Human Anatomy and Physiology I *SG* 4
BIO 340 General Genetics 4
Choose between the course combinations below 4–5
BIO 360 Animal Physiology (3)
BIO 361 Animal Physiology Laboratory (2)
— *or* —
PLB 308 Plant Physiology (4)
CHM 113 General Chemistry *SQ* 4
CHM 115 General Chemistry with Qualitative Analysis *SQ* 5
MIC 205 Microbiology *SG* 3
MIC 206 Microbiology Laboratory *SG* 1
PHY 101 Introduction to Physics *SQ* 4
Upper-division elective* 4
Total 46–47

* The elective is BIO 202 if BIO 201 is taken.

Secondary Education Course Work

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 *L* 3
EDP 310 Educational Psychology *SB* 3
RDG 301 Literacy and Instruction in the Content Areas 3
SED 403 Middle and Secondary School Principles, Curriculum, 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 *C* 3
SPE 311 Orientation to Education of Exceptional Children *SB* .. 3

Ecological Restoration Concentration

The ecological restoration concentration, composed of 65 semester hours, focuses on rehabilitation and management practices that improve the ecological structure and function of degraded ecosystems. Restoration activities may involve all ecosystem components including soils, water, vegetation, and wildlife. The goals of restoration are to restore ecological integrity and to meet societal needs for sustainable and functional ecosystems. The restoration process includes identifying the causes of degradation, devising methods and goals for the restoration effort, developing management strategies for restoring sites, monitoring changes at sites and assessing restoration success.

Ecological Restoration Concentration Requirements

ABS 150 Environmental Conservation 3
ABS 207 Applied Plant Taxonomy 3
ABS 225 Soils 3
ABS 226 Soils Laboratory 1
ABS 368 Plant Propagation 3
ABS 370 Ecology: Individuals, Populations, and Communities .. 3
ABS 372 Ecology: Ecosystems and Landscapes 3
ABS 380 Restoration and Wildlife Plants 3
ABS 381 Natural Resources Policy 3
ABS 402 Vegetation and Wildlife Measurement 3
ABS 430 Watershed Management 3
or ABS 481 Riparian and Wetland Restoration (3)
ABS 433 Riparian and Wetland Ecology 3
ABS 440 Ecological Restoration Techniques 3
ABS 441 Restoration Planning Practicum 1
ABS 480 Ecosystem Management and Planning *L* 3
ABS 482 Ecology and Planning for Restoration 3
ABS 483 Restoration Planning Practicum 2
ABS 485 GIS in Natural Resources 3
ABS 490 Environmental Resources Seminar 1
CHM 101 Introductory Chemistry *SQ* 4
CHM 231 Elementary Organic Chemistry *SQ* 3
Approved upper-division electives 8
Total 65

Note: If General Studies courses are carefully chosen with assistance from an advisor, then up to an additional 17 semester hours of electives can be chosen.

Urban Horticulture Concentration

Urban horticulture focuses on the relationship of plants and people in cities with an emphasis on the biology of plants applied to human landscapes. Urban horticulture students learn and practice principles that create pleasing environments in which people work and live. Urban horticulture graduates are qualified to plan or manage environmentally sustainable amenity landscapes or grow amenity trees, shrubs and ground covers, turf, and bedding plants. Students also gain expertise in plant identification, plant propagation, irrigation, fertilization, and pest management, as well as urban forestry and horticultural education.

ABS	225 Soils	3
ABS	226 Soils Laboratory	1
ABS	484 Internship	3
CHM	101 Introductory Chemistry *SQ*	4
CHM	231 Elementary Organic Chemistry *SQ*	3
PGM	466 Integrated Pest Control	2
PLB	260 Plants in Cities: Introduction to Urban Horticulture *SG*	4
PLB	308 Plant Physiology	4
PLB	362 Landscape Plants	3
PLB	364 Urban Forestry	3
PLB	370 Environmental Landscape Management	3
PLB	372 Turf Management	3
	or PLB 472 Greenhouse/Nursery Management (3)	
PLB	414 Plant Pathology *L*	3
Approved upper-division electives		26
Total		65

Wildlife Habitat Management Concentration

The wildlife habitat management concentration, composed of 65 semester hours, focuses on the connectivity between wildlife, ecology, and habitat management. This study requires an understanding of the interrelations between the atmosphere, water, vegetation, and wildlife. The goal of wildlife habitat management is to create conditions that ensure sustainable wildlife populations. Achieving this goal requires identification of existing wildlife populations, determination of site potential for sustainable wildlife populations, creation of sustainable conditions for wildlife populations, and the monitoring of wildlife populations for future generations.

Wildlife Habitat Management Concentration Requirements

ABS	150 Environmental Conservation	3
ABS	207 Applied Plant Taxonomy	3
ABS	355 Vertebrate Zoology	4
ABS	370 Ecology: Individuals, Populations, and Communities	3
ABS	374 Introduction to Wildlife Management	3
ABS	375 Conservation Biology	3
ABS	376 Wildlife Ecology	3
ABS	381 Natural Resources Policy	3
ABS	402 Vegetation and Wildlife Measurement	3
ABS	435 Ecological Modeling	3
ABS	440 Ecological Restoration Techniques	3
ABS	470 Mammalogy	3
ABS	471 Ornithology	3
ABS	475 Habitat Management for Small Wildlife	3
ABS	476 Big Game Habitat Management	3
ABS	480 Ecosystem Management and Planning *L*	3
ABS	485 GIS in Natural Resources	3
ABS	490 Environmental Resources Seminar	1
CHM	101 Introductory Chemistry *SQ*	4
CHM	231 Elementary Organic Chemistry *SQ**	3
Approved upper-division electives		5
Total		65

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

Note: If General Studies courses are carefully chosen with assistance from an advisor, then up to an additional 17 semester hours of electives can be chosen.

B.I.S. CONCENTRATION

A concentration in environmental resources is available under the Bachelor of Interdisciplinary Studies (B.I.S.) 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 B.I.S. program take active roles in creating their educational plans and defining their career goals. For more information, see "Bachelor of Interdisciplinary Studies," page 116.

GRADUATE PROGRAMS

Faculty associated with the Applied Biological Sciences program also offer programs leading to M.S. degrees in Environmental Resources and Plant Biology. The faculty also participate with the Graduate College and the Colleges of Architecture and Environmental Design and Liberal Arts and Sciences in programs leading to Ph.D. degrees in Environmental Design and Planning, with a concentration in Planning or Plant Biology. See the *Graduate Catalog* for requirements.

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 150 Environmental Conservation. (3)
fall
Principles of environmental conservation from ecological, global, and historical perspectives.

ABS 201 Human Anatomy and Physiology I. (4)
fall, spring, summer
Structure and dynamics of the human mechanism. Lecture, lab.
General Studies: SG

ABS 202 Human Anatomy and Physiology II. (4)
fall, spring, summer
Continuation of ABS 201. Lecture, lab. Prerequisite: ABS 201 or instructor approval.

ABS 207 Applied Plant Taxonomy. (3)
spring
Introduces identification of vascular plants emphasizing seed plants. Surveys seed plant families. Lecture, lab, field trips. Prerequisite: BIO 187.

ABS 225 Soils. (3)
fall
Fundamental properties of soils and their relation to plant growth and the nutrition of man and animals. Relation of soils to environmental quality. Prerequisite: CHM 101 or 113 (or its equivalent).

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.

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. Lecture, lab. Fee. Prerequisites: BIO 187 or PLB 108.
General Studies: SG

ABS 310 General Genetics. (4)
fall and spring
Studies classical and molecular aspects of transmission, mutation, and function of genetic material. Prerequisite: BIO 187.

ABS 320 Plant Physiology. (4)
spring
Concepts of plant function: carbon metabolism, energy acquisition, regulation of growth and development, stress responses, and water and nutrient uptake. Lecture, lab. Fee. Prerequisites: BIO 187 and CHM 101 (or their equivalents).

ABS 330 Developmental Anatomy. (3)
selected semesters
General developmental biology (embryology) and comparative structure of organ systems, illustrated mainly by vertebrate examples. Prerequisite: BIO 187.

ABS 340 Cell Biology. (3)
selected semesters
Survey of major topics in cell biology, including structural, biochemical, and molecular aspects of cell function. 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. Internet. Prerequisite: MAT 117 (or its equivalent).
General Studies: CS

ABS 352 Animal Physiology. (3)
selected semesters
Physiological mechanisms of the higher vertebrates. Prerequisites: BIO 187; CHM 101; MAT 117.

ABS 353 Animal Physiology Laboratory. (1)
selected semesters
Experimental laboratory studies of physiological mechanisms in animals and model systems. Lab. Fee. Prerequisites: CHM 115; MAT 117. Pre- or corequisite: ABS 352.

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. Fee. Prerequisite: ABS 260 (or its equivalent).

ABS 363 Landscape Practices. (4)
fall
Installation, irrigation, and maintenance of amenity plants in urban landscapes with an emphasis on integrated environmental landscape technologies. Lecture, lab. Fee. Prerequisite: ABS 260 (or its equivalent).

ABS 364 Urban Forestry. (4)
fall
Care, maintenance, and valuation of the urban forest, including public and private landscape codes. Lecture, lab. 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. Fee.

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: Individuals, Populations, and Communities. (3)
fall
Interactions between organisms and their environments, structure, and dynamics of populations and communities 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. (3)
fall
Managing wildlife in the Southwest, including life histories of small game, fur bearers, big game, and selected nongame specials. Lecture, 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, 1 weekend field trip. 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 corequisites: ABS 440.

ABS 450 Methods of Teaching Biology. (3)
fall
Methods of instruction, experimentation, organization, and presentation of appropriate content in biology. Prerequisite: 20 hours in the biological sciences.

ABS 451 Advanced Methods of Teaching Biology. (3)
spring
Design, delivery, and evaluation of student-centered, inquiry-based lessons for high school biology students. Learning cycle. Prerequisite: ABS 450.

ABS 452 Plant Pathology. (3)
spring
Identification and control of biotic and abiotic factors that cause common disease problems to plants. Prerequisite: BIO 187 or instructor approval
General Studies: L

ABS 460 Organic Gardening. (2)
fall
Applied principles and practices of organic gardening in the low desert, including environmental impacts of modern food production. Lecture, 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. Lecture, lab. Fee. Prerequisite: ABS 260.

ABS 463 Sports and Recreation Turf. (4)
fall
Maintenance and operation of large areas such as golf courses, athletic fields, and park areas. Lecture, lab. Prerequisite: ABS 260 (or its equivalent).

ABS 465 Senior Enterprise Project. (2)
fall and spring
Selection and completion of an urban horticulture project with faculty advisor approval related to the graduate's 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. Fee. Prerequisite: ABS 355.

ABS 475 Habitat Management for Small Wildlife. (3)
fall
Habitat management considerations and practices for small game and nongame wildlife species in North America. Lecture, 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. Prerequisites: ABS 370, 376.

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 restoration of degraded landscapes. Prerequisites: ABS 225, 372, 440.

ABS 483 Restoration Planning Practicum. (2)
spring
Field experience in ecological restoration techniques, including analysis of problems, selection of mitigation techniques, and planning for implementation. 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 490 Environmental Resources Seminar. (1)
fall and spring
Current literature and significant developments involving environmental resources. May be repeated for credit.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

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 56.

ENVIRONMENTAL RESOURCES (ERS)

ERS 191 First-Year Seminar. (1–3)
selected semesters

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

ERS 484 Internship. (1–12)
selected semesters

ERS 489 Undergraduate Research. (1–3)
fall and spring
Undergraduate research under the supervision of an environmental resources faculty member. Prerequisite: junior or senior status.

ERS 492 Honors Directed Study. (1–6)
selected semesters

ERS 493 Honors Thesis. (1–6)
selected semesters

ERS 494 Special Topics. (1–4)
selected semesters

ERS 498 Pro-Seminar. (1–7)
selected semesters

ERS 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 56.

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 56.

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 85.

Faculty of Applied Psychology

www.east.asu.edu/ecollege/appliedpsych
480/727-1515
CNTR 78

Roger W. Schvaneveldt, Faculty Head

Professors: Cooke, Schvaneveldt

Assistant Professor: Gray

APPLIED PSYCHOLOGY—B.S.

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, aviation, or manufacturing. Although most careers in psychology require graduate training, there are some employment opportunities for B.S. 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 ASU East programs such as manufacturing engineering technology, aeronautical management technology, information management technology, and business administration.

Graduation Requirements

The completion of 120 semester hours—including First-Year Composition, General Studies (see "General Studies," page 85), and major requirements—leads to the B.S. degree. The major allows for at least 21 semester hours of electives. The major requirements for the B.S. 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 *SB*	3
PGS	350	Social Psychology *SB*	3
PSY	230	Introduction to Statistics *CS*	3
PSY	290	Research Methods *L/SG*	4
PSY	323	Sensation and Perception	3
PSY	324	Memory and Cognition	3
PSY	325	Physiological Psychology	3
PSY	330	Statistical Methods *CS*	3
PSY	477	Applied Psychology Capstone Experience*	3
		or HON 493 Honors Thesis (3)	
Total			28

* This PSY course is offered only by ASU East. All other PSY courses listed above are offered by both 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:

AMT	410	Aviation Safety and Human Factors	3
PGS	471	Psychological Testing	3
PSY	320	Learning and Motivation	3
PSY	360	Cognitive Science*	3
PSY	390	Experimental Psychology *L*	3
PSY	437	Human Factors *L*	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 Sports*	3
PSY	494	Special Topics	1–4

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

Related Course Work

BIO	course with a lab		4
MAT	210	Brief Calculus *MA*	3
		or a higher MAT course (3)	
Computer skills course			3
Writing skills course			3
Courses selected in consultation with an advisor			5
Total			18

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" 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	3
		or PSY 438 Human-Computer Interaction (3)	
		or PSY 440 Industrial/Organizational Psychology (3)	
Additional hours of upper-division PSY and/or PGS courses			9

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

PGS	399	Supervised Research	3
PGS	499	Individualized Instruction	3
		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, send e-mail to east.college@asu.edu, or access the Web site at www.east.asu.edu/ecollege/appliedpsych.

For PGS courses and additional PSY courses, see "Department of Psychology," page 428.

PSYCHOLOGY (SCIENCE AND MATHEMATICS) (PSY)

The courses listed are offered only by ASU East. For more PSY courses that may be offered by ASU East, see "Department of Psychology" under "College of Liberal Arts and Sciences."

E PSY 360 Cognitive Science. (3)
once a year
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. 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, spring, summer
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 56.

Faculty of Business Administration

www.east.asu.edu/ecollege/businessadmin
480/727-1515
CNTR 76

Roger W. Hutt, Faculty Head

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

Associate Professors: Hutt, Patterson, Richards

Assistant Professors: Manfredo, Skilton

Senior Lecturer: Watson

BUSINESS ADMINISTRATION—B.S.

The B.S. 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 ASU Main W. P. Carey School of Business AACSB International accreditation, but it is offered through East College.

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 the General Studies requirement (see "General Studies," page 85.)

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 ASU East.

Business Administration Core (22 Semester Hours)

BUS	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 460 Strategic Leadership (3)	

Approved Electives (18 Semester Hours)

Total	18

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 ASU East industry-specific business programs (Agribusiness, Information and Management Technology, and Aeronautical Management Technology).

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

Minor in Small Business

The minor in small business is in the process of transferring from the W. P. Carey School of Business, ASU Main, to the faculty of Business Administration in East College at ASU East. For more information, call 480/727-1515.

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 85.

B.I.S. Concentration

A concentration in small business is available under the Bachelor of Interdisciplinary Studies (B.I.S.) 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 B.I.S. program take active roles in creating their educational plans and defining their career goals. For more information, see "Bachelor of Interdisciplinary Studies," page 116.

Faculty of Education

www.east.asu.edu/ecollege/education
480/727-1103
COMM2 101

Bette S. Bergeron, Faculty Head

Professor: Bergeron

Senior Lecturer: Wenhart

Lecturers: Gryder, Hopper, Prest

ELEMENTARY EDUCATION—B.A.E.

Program Overview

The Elementary Education program at ASU East is unique in its focus on intensive field experiences, practical application of current theory, and emphasis on technology. The newly revised 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 ASU 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 85) 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 ASU 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 *SB*	3
MCE	446	Understanding the Culturally Diverse Child *C*	3
MTE	180	Theory of Elementary Mathematics	3
SPE	311	Orientation to Education of Exceptional Children *SB*	3

* For foundation courses, see "College of Education," page 180.

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	Schooling and Social Context *L*	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	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 nondegree 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. This intensive 13-month program begins each May, and is offered in conjunction with the Williams Community School located adjacent to the ASU East campus. The application deadline for this specific program is April 15.

For more information, call 480/727-1103.

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

1. admission to ASU East;
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);
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 ASU East 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 ASU East 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.

Advising Information. It is important for all students to work closely with an ASU East academic advisor to ensure that their overall curriculum is coherent and best reflects their unique academic talents. 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 ASU East Teacher Education Office at 480/727-1103.

Applied Biological Sciences 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 604. Students complete course work in the applied biology 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.

Application. Students interested in pursuing the applied biological sciences/secondary education concentration need to be admitted into the Teacher 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 ASU East. 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 ASU East Education program, including two letters of recommendation and current résumé—the résumé and letters outlining the candidate's experiences with adolescents and/or their families and show proficiency in the content (i.e., applied biological sciences).

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 85). Courses specific to the applied biological sciences/secondary education concentration are outlined below:

Applied Biology Core

ABS	350	Applied Statistics *CS*	3
BIO	187	General Biology I *SQ*	4
BIO	188	General Biology II *SG*	4
MAT	210	Brief Calculus *MA*	3
Total			14

Applied Biological Sciences/Secondary Education Concentration Requirements

ABS	150	Environmental Conservation	3
ABS	207	Applied Plant Taxonomy	3
ABS	355	Vertebrate Zoology	4
ABS	370	Ecology: Individuals, Populations, and Communities	3
BIO	201	Human Anatomy and Physiology I *SG*	4
BIO	340	General Genetics	4
Choose between the course combinations below			4–5
	BIO	360 Animal Physiology (3)	
	BIO	361 Animal Physiology Laboratory (2)	
		— *or* —	
	PLB	308 Plant Physiology (4)	
CHM	113	General Chemistry *SQ*	4
CHM	115	General Chemistry with Qualitative Analysis *SQ*	5
MIC	205	Microbiology *SG*	3
MIC	206	Microbiology Laboratory *SG*	1
PHY	101	Introduction to Physics *SQ*	4
Upper-division elective*			4
Total			45–46

* BIO 202 if BIO 201 is taken

Secondary Education Course Work

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

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 85.

EDP	303	Human Development *L*	3
EDP	310	Educational Psychology *SB*	3
RDG	301	Literacy and Instruction in the Content Areas	3
SED	403	Middle and Secondary School Principles, Curriculum, 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 *C*	3
SPE	311	Orientation to Education of Exceptional Children *SB*	3

Advising Information. Students interested in the applied biological sciences/secondary education concentration must participate in dual advising—both 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 advisement 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 ASU East Teacher Education Office, COMM2, call 480/727-1103, or access the Web site at www.east.asu.edu/ecollege/education.

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 Schooling and Social Context. (3)
fall and spring
Seminar addressing foundational issues in education, including the culture of schooling, current social contexts, and educational law. Interactive forum.
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.

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 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 ASU 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 ASU 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 ASU 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. 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 ASU 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 ASU 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. Prerequisites: 2.50 GPA; completion of professional course sequence; approval of ASU 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 ASU 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 ASU 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 56.

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 56.

Department of Exercise and Wellness

www.east.asu.edu/ecollege/wellness
480/727-1945
CLRB

William J. Stone, Chair

Professors: Burkett, Corbin, Stone

Associate Professor: Swan

Assistant Professors: Adams, Phillips, Tudor-Locke

Lecturer: Woodruff

EXERCISE AND WELLNESS—B.S.

The B.S. 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 Courses," page 87.

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

Required core courses

EXW 300	Foundations of Exercise and Wellness *L/SB*	3
EXW 310	Computer Skills and Technology for Exercise and Wellness *CS*	3
EXW 342	Health Behavior Change	3
EXW 450	Cultural and Social Issues in Exercise and Wellness *SB, C*	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:

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 85.

BIO	201	Human Anatomy and Physiology I *SG*	4
BIO	202	Human Anatomy and Physiology II	4
CHM	101	Introductory Chemistry *SQ*	4
		or any equivalent chemistry	
COM	225	Public Speaking *L*	3
PGS	101	Introduction to Psychology *SB*	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	6
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			27

* 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 *L*	3
EXW	444	Epidemiology	3
Elective*			6
Total			27

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

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 *L/SB*	3
EXW	325	Fitness for Life	3
EXW	342	Health Behavior Change	3
EXW	450	Cultural and Social Issues in Exercise and Wellness *SB, C*	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.

B.I.S. CONCENTRATION

A concentration in wellness foundations is available under the Bachelor of Interdisciplinary Studies (B.I.S.) 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 B.I.S. program take active roles in creating their educational plans and defining their career goals. For more information, see "Bachelor of Interdisciplinary Studies," page 116.

GRADUATE PROGRAMS

The faculty in the Department of Exercise and Wellness offer programs leading to the M.S. degree in Exercise and Wellness. The department also participates with the Graduate College and College of Education in the program leading to the Ph.D. 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. 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 to students who have credit for EXW 325.

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 and spring
Analyzes research in various disciplines which 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. 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 Exercise and Wellness majors or 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)
fall
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)
spring
Introduces epidemiological concepts and research literature, including physical activity, nutrition, tobacco, alcohol, injury prevention, and safe sex. Prerequisites: EXW 300, 310, 320. Pre- or corequisites: EXW 325, 350.

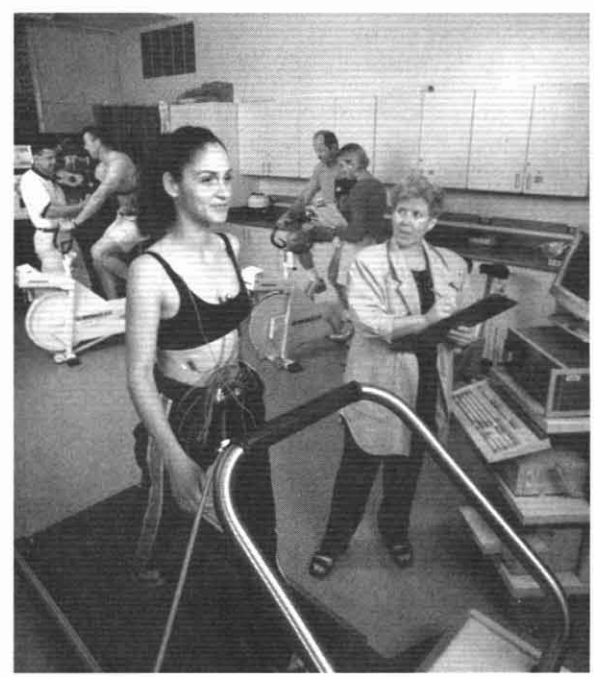
EXW 450 Cultural and Social Issues in Exercise and Wellness. (3)
spring
Examines contemporary cultural and social issues in physical activity. Focus on theories of social behavior, racial, ethnic, and cultural differences. Prerequisite: PGS 101.
General Studies: SB, C

EXW 460 Resistance Training Application and Theory. (3)
fall
Fosters critical thinking as it applies to resistance training theory. Pre- or corequisite: EXW 315.

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.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

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 56.



The Exercise and Wellness Lab at ASU East Tim Trumble photo

Faculty of Human Health Studies

www.east.asu.edu/ecollege/humanhealth
480/727-1065
CLRB 102

William L. Mermis, Faculty Head

HUMAN HEALTH STUDIES—B.A. AND B.S.

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 B.S. program.

Graduation Requirements

To graduate with either a B.A. or a B.S. 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 B.A. and B.S. 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 B.A. and B.S. programs lies in the mathematics and science requirements. Both B.A. and B.S. students must take one semester of general biology with a lab and two semesters of human anatomy and physiology with labs. The B.S. program requires additional mathematics courses (through brief calculus) and the following science courses:

CHM 113 General Chemistry *SQ* 4
CHM 116 General Chemistry *SQ* 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 *SQ** 3
PHY 112 General Physics *SQ** 3
PHY 113 General Physics Laboratory *SQ** 1
PHY 114 General Physics Laboratory *SQ** 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 56.

Faculty of Multimedia Writing and Technical Communication

www.east.asu.edu/ecollege/multimedia
480/727-1190
CNTR 80

Barry M. Maid, Faculty Head

Professor: Maid

Associate Professor: Barchilon

MULTIMEDIA WRITING AND TECHNICAL COMMUNICATION—B.S.

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.

1. Students learn to communicate, both orally and in writing, across audiences and cultures.
2. Students become aware of issues of ethics in technical communications.
3. Students 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. Students gain an understanding of appropriate technical genres and learn to demonstrate technical editing skills in all work.
5. Students 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 B.S. 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 *L*	3
TWC 401 Principles of Technical Communication *L*	3
TWC 411 Principles of Visual Communication *L*	3
TWC 421 Principles of Writing with Technology *L*	3
TWC 431 Principles of Technical Editing *L*	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—B.A.S.

A Bachelor of Applied Science is also offered with a concentration in multimedia writing and technical communication. The B.A.S. degree is a "capstone" degree for the Associate of Applied Science degree. The B.A.S. 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 B.A.S. degree program is restricted to students holding an A.A.S. 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 A.A.S. degree, the B.A.S. 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
B.A.S. core	15
General Studies	19
MWTC concentration	20
Total	60

General Studies Curriculum. The B.A.S. curriculum builds on the general education content of the A.A.S. 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.

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 85.

B.A.S. 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.

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

B.I.S. CONCENTRATION

A concentration in multimedia writing and technical communication is available under the Bachelor of Interdisciplinary Studies (B.I.S.) 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 B.I.S. program take active roles in creating their educational plans and defining their career goals. For more information, see "Bachelor of Interdisciplinary Studies," page 116.

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

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

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

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 56.

Department of Nutrition

www.east.asu.edu/ecollege/nutrition
480/727-1728
HSC 1386

Linda A. Vaughan, Chair

Professors: Johnston, Vaughan

Assistant Professors: Hampl, Hutchins, Winham, Woolf

Lecturers: Dixon, Hall

NUTRITION—B.S.

The B.S. degree in Nutrition offers three concentrations: dietetics, human nutrition, and food and nutrition management. 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 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 towards a career in nutrition research or completing a premedical/predental program of study. 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.

Accreditation. The B.S. 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
216 W JACKSON BLVD
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 *L* 3
NTR	350	Nutrition Counseling 3
NTR	400	Nutrition and Health Promotion 3
NTR	440	Advanced Human Nutrition I 3
NTR	441	Advanced Human Nutrition II 3
NTR	444	Medical Nutrition Therapy 3
NTR	445	Quantity Food Production 3
NTR	446	Human Nutrition Assessment Lecture/Laboratory 3
NTR	448	Community Nutrition *L* 3
Total		 43

In addition to the required NTR courses, the following related courses are required in order 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 *SG* 4
BIO	202	Human Anatomy and Physiology II 4
CHM	113	General Chemistry *SQ* 4
CHM	116	General Chemistry *SQ* 4
CHM	231	Elementary Organic Chemistry *SQ*[1] 3
CHM	235	Elementary Organic Chemistry Laboratory *SQ*[1] 1
MIC	205	Microbiology *SG*[2] 3
MIC	206	Microbiology Laboratory *SG*[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.

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

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.

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 85.

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 *SG*	4
BIO	202 Human Anatomy and Physiology II	4
CHM	113 General Chemistry *SQ*	4
CHM	116 General Chemistry *SQ*	4
CHM	231 Elementary Organic Chemistry *SQ*[1]	3
CHM	235 Elementary Organic Chemistry Laboratory *SQ*[1]	1
MIC	205 Microbiology *SG*[2]	3
MIC	206 Microbiology Laboratory *SG*[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.

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 or NTR 241 Human Nutrition (3)	3
NTR	142 Applied Food Principles	3
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	351 Nutrition and Health Communications	3
NTR	401 Professional Practice in Food Service Management	3
NTR	445 Quantity Food Production	3
Total		27

An additional three 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 *SQ*	4
MIC	205 Microbiology *SG*[1]	3
MIC	206 Microbiology Laboratory *SG*[1]	1
Business or technical writing course		3
Management (AGB 310, or BUS 301, or COB 380, or MGT 300, 380, or 394)		3
Marketing (AGB 320, COB 382, or 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 courses with the following prefixes: ACC, AGB, BUS, COB, CIS, CSE, ECN, FIN, GBS, HSA, IBS, MGT, MKT, QBA, SCM, and TWC. Students select these courses in consultation with the Nutrition academic advisor.

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

NTR	100 Introductory Nutrition or NTR 241 Human Nutrition (3)	3
NTR	142 Applied Food Principles	3
NTR	300 Computer Applications in Nutrition *CS*	3
NTR	343 Food Service Purchasing	3
NTR	344 Nutrition Services Management *L*	3
NTR	445 Quantity Food Production	3
Total		18

Human Nutrition. The Human Nutrition 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 *C*	3
NTR	350 Nutrition Counseling	3
NTR	351 Nutrition and Health Communications	3
NTR	446 Human Nutrition Assessment Lecture/Laboratory	3
NTR	448 Community Nutrition *L*	3
NTR	450 Nutrition in the Life Cycle I *SB*	3
NTR	451 Nutrition in the Life Cycle II	3

B.I.S. CONCENTRATION

Concentrations in (1) food and nutrition management and (2) human nutrition are available under the Bachelor of Interdisciplinary Studies (B.I.S.) 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 B.I.S. program take active roles in creating their educational plans and defining their career goals. For more information, see "Bachelor of Interdisciplinary Studies," page 116.

APPLIED SCIENCE—B.A.S.

Food Service Management Concentration. The B.A.S. degree with a concentration in food service management is designed to complement and enhance the educational preparation of students holding an A.A.S. degree from a regionally accredited U.S. postsecondary educational institution. The concentration is particularly designed for students holding an A.A.S. degree in culinary or hospitality science. The degree prepares students for careers in food production, service, management, and marketing. With additional educa-

tion 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 B.A.S. degree program is restricted to students holding an A.A.S. 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 B.A.S. 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.

A.A.S. degree	60
Assignable credit	6
B.A.S. core	15
General Studies	19
Concentration	20
Total	120

General Studies Curriculum. The B.A.S. curriculum builds on the general education content of the A.A.S. 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 *C*	3
NTR 401 Professional Practice in Food Service Management	3
NTR 445 Quantity Food Production	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. Lecture, computer 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 202; NTR 241.

NTR 341 Introduction to Planning Therapeutic Diets. (3)
fall and summer
Cultural, health, and economic aspects of diet planning. Assessment of food and diet composition. Review of common therapeutic diets. Fee. Prerequisite: NTR 100 or 241 (or its equivalent).

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. 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: C

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. Lecture, lab. Prerequisites: NTR 100 (or 241) and 142 (or their equivalents).

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.

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 85.

NTR 400 Nutrition and Health Promotion. (3)
fall and spring
Role of nutrition in health promotion; application of academic knowledge in field practicum; components 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 202 and CHM 231 and NTR 241 (or their equivalents).

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 and 341 (or their equivalents). CHM 231 strongly recommended.

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 Quantity Food Production. (3)
fall and spring
Standardized methods of quantity food preparation, operation of institutional equipment, institutional menu planning, quantity food experiences. Fee. Prerequisites: NTR 100 (or 241) and 142 (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).

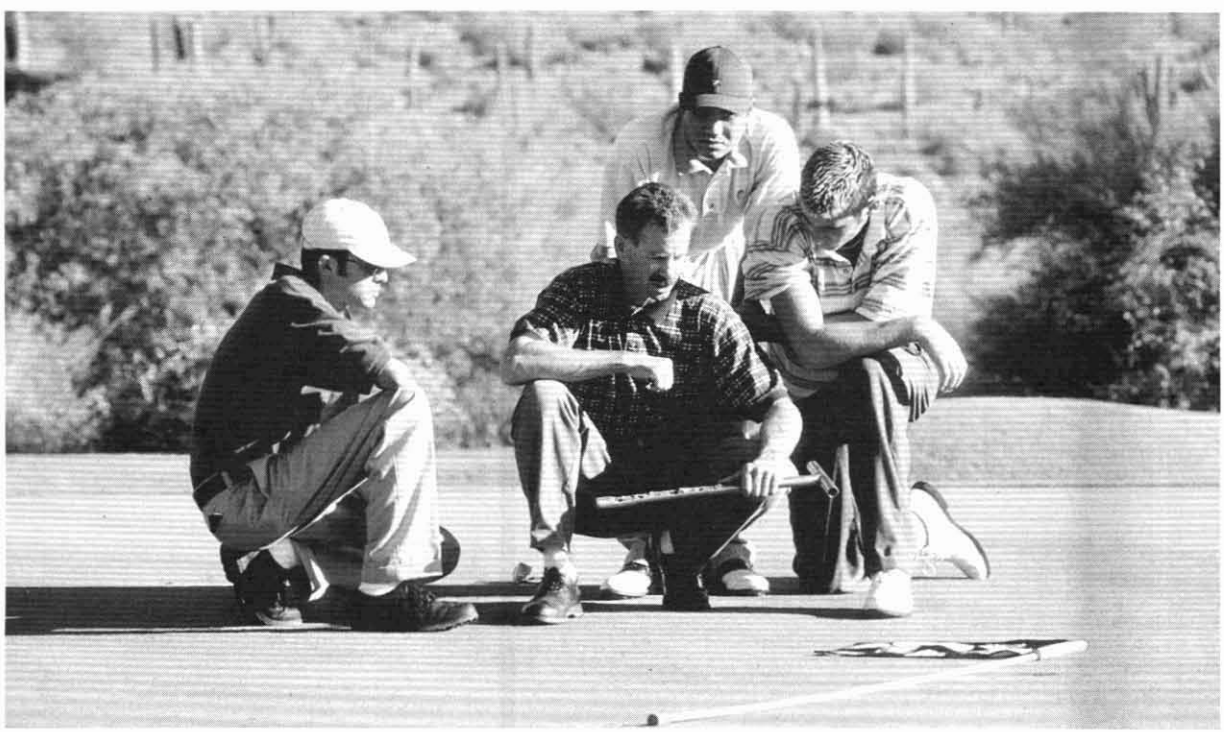
NTR 448 Community Nutrition. (3)
fall and spring
Food-related behaviors; organization and delivery of nutrition services; program design, implementation, and evaluation strategies; nutrition assessment of populations. Prerequisite: NTR 241 (or its equivalent).
General Studies: L

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 requirements and nutrition-related disorders of adolescence, middle adulthood, and later life. 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 56.

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 56.



Maintaining fairways and greens is taught in the classroom and on the course. Tim Trumble photo

College of Technology and Applied Sciences

www.east.asu.edu/ctas **Albert L. McHenry, Ph.D., Dean**

PURPOSE

The College of Technology and Applied Sciences (CTAS) helps students develop knowledge and skill in technological fields that qualify them for career positions and leadership responsibility in industry, government, and commercial enterprise. Each student is guided to select a major that addresses short-term employment goals through state-of-the-art technological preparation. Long-term career aspirations are supported through the development of a strong base in mathematics, science, engineering, and technical principles, coupled with a solid foundation in liberal arts and a commitment to lifelong learning.

Engineering technology programs offer professional preparation through a B.S. degree that stresses state-of-the-art technological applications. Special emphasis is placed on the development of knowledge and skill in applied mathematics, natural sciences, and engineering principles with formal laboratory experiences. This mixed educational approach provides the basis for both employment and a long-term career evolution.

The other CTAS technology programs provide the opportunity for students to develop knowledge and skill in solving broad-scale industrial problems, operating modern technological systems, and managing personnel in the implementation of processes and production. Programs of study focus on the latest technologies in areas such as aviation flight training and management, environmental technology management, graphic information technology, fire service management, and industrial management.

Each student is encouraged to participate in creative activities through a close relationship with a faculty mentor. Learning through execution of the scientific method, using both inductive and deductive processes in applied research activities, is essential for both faculty and students.

ORGANIZATION

The College of Technology and Applied Sciences is composed of the following four academic units:

Department of Aeronautical Management Technology
Department of Electronics and Computer Engineering Technology
Department of Information and Management Technology
Department of Mechanical and Manufacturing Engineering Technology

DEGREE PROGRAMS

See the "College of Technology and Applied Sciences Baccalaureate Degrees and Majors" table, page 624. For graduate degrees, see the "College of Technology and Applied Sciences Graduate Degrees and Majors" table, page 625.

The College of Technology and Applied Sciences offers programs leading to the B.S. degree and B.A.S. degree. The college also offers the Master of Science in Technology (M.S.T.) degree. For more information on courses, faculty, and programs in the M.S.T. degree, see the *Graduate Catalog*.

ACCREDITATION

Undergraduate B.S. degree programs in Aeronautical Engineering Technology, Electronics Engineering Technology, and Manufacturing Engineering Technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. For additional information, call 410/347-7700 or write

TECHNOLOGY ACCREDITATION COMMISSION OF
THE ACCREDITATION BOARD FOR
ENGINEERING AND TECHNOLOGY INC
111 MARKET PLACE SUITE 1050
BALTIMORE MD 21202-7102

Both the professional flight and the air transportation management concentrations in the Department of Aeronautical Management Technology are fully accredited by the Council on Aviation Accreditation. For more information call 334/844-2431, send e-mail to caa@auburn.edu, or write

COUNCIL ON AVIATION ACCREDITATION
3410 SKYWAY DRIVE
AUBURN AL 36830

The Bachelor of Science in Industrial Technology Degree including the environmental technology management, graphic information technology, and industrial technology management concentrations is fully accredited by the National Association of Industrial Technology (NAIT). For more information, call 734/677-0720, e-mail nait@nait.org, or write

NATIONAL ASSOCIATION OF INDUSTRIAL
TECHNOLOGY
3300 WASHTENAW AVENUE SUITE 220
ANN ARBOR MI 48104-4200

ADMISSION—B.S. DEGREE

The College of Technology and Applied Sciences admits first-year students who meet the undergraduate admission

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 85.

College of Technology and Applied Sciences Baccalaureate Degrees and Majors

Major	Degree	Concentration	Administered By
Aeronautical Management Technology*	B.S.	Air transportation management, professional flight	Department of Aeronautical Management Technology
Applied Science	B.A.S.	Aviation maintenance management technology, aviation management technology, computer systems administration, digital media management, digital publishing, emergency management, fire service management, instrumentation, manufacturing technology and management, microcomputer systems, municipal operations management, operations management, semiconductor technology, software technology applications, technical graphics	Bachelor of Applied Science Advisory Committee
Computer Engineering Technology*	B.S.	Computer hardware technology, embedded systems technology, software technology	Department of Electronics and Computer Engineering Technology
Electronics Engineering Technology*	B.S.	Electronic systems, microelectronics, telecommunications	Department of Electronics and Computer Engineering Technology
Industrial Technology	B.S.	Environmental technology management, graphic information technology, industrial technology management	Department of Information and Management Technology
Manufacturing Engineering Technology*	B.S.	Manufacturing engineering technology, mechanical engineering technology	Department of Mechanical and Manufacturing Engineering Technology
Mechanical Engineering Technology*	B.S.	Aeronautical engineering technology, automation engineering technology, mechanical engineering technology	Department of Mechanical and Manufacturing Engineering Technology

* This major requires more than 120 semester hours to complete.

requirements of Arizona State University. See "Undergraduate Admission," page 59. High school precalculus, physics, and chemistry are recommended. Transfer applicants must meet the university requirements for transfer students as specified under "Transfer Credit," page 62, with the exception that Arizona resident transfer students must have a 2.25 GPA.

Students admitted to a B.S. degree program in CTAS begin study under one of two student classifications, professional or preprofessional.

Professional Status

First-year students (new freshmen) are admitted to CTAS with professional status if they meet the general aptitude criteria for admission and have no deficiencies in the basic competency requirements for admission. First-year students admitted upon completion of the GED are admitted with professional status if they have also achieved the minimum ACT or SAT scores required for undergraduate admission to the university.

Students transferring from other ASU colleges are admitted to CTAS with professional status if they have no remaining admissions deficiencies and meet the required GPA.

Transfer students from other institutions must meet the minimum admission requirements for college transfer students as described under "Transfer Credit," page 62. The CTAS also requires resident transfer students to have a cumulative GPA of 2.25.

All international students must have a minimum 500 TOEFL score to be admitted with professional status.

Preprofessional Status

All other students are admitted with preprofessional status and may apply for professional status after they have removed the deficiency that disallows awarding professional status. Students with preprofessional status may not register for 300- and 400-level courses in the college until they have been awarded professional status. See an advisor for details.

Transfer Credit

Credit for courses taken at a community college or another four-year institution is awarded according to the guidelines under "Transfer Credit," page 62. Students who are transferring from an Arizona community college and have been in continuous residence may continue under the catalog in effect at the time of their entrance into the community college. Students should be aware that some course work that transfers to ASU may not be applicable toward CTAS degree requirements. Students should confer with an advisor. The College of Technology and Applied Sciences maintains a cooperative agreement with most Arizona community colleges and with selected out-of-state colleges and universities to structure programs that are directly transfer-

College of Technology and Applied Sciences Graduate Degrees and Majors

Major	Degree	Concentration	Administered By
Technology	M.S.Tech.	Aeronautical engineering technology, manufacturing engineering technology, mechanical engineering technology	Department of Mechanical and Manufacturing Engineering Technology
		Aviation human factors, aviation management technology	Department of Aeronautical Management Technology
		Computer systems engineering technology, electronic systems engineering technology, instrumentation and measurement technology, microelectronics engineering technology	Department of Electronics and Computer Engineering Technology
		Environmental technology management, fire service administration, information technology, management of technology	Department of Information and Management Technology
		Global technology and development, security engineering technology	College of Technology and Applied Sciences

able into the technology programs at ASU East. For assistance in the transfer from Arizona community colleges, transfer guides are available at www.asu.edu/provost/articulation.

Courses taken more than five years before admission to a CTAS degree program are not normally accepted for transfer credit at the option of the department in which the applicant wishes to enroll. Courses completed within the five years preceding admission are judged as to their applicability to the student's curriculum.

ADMISSION—B.A.S. DEGREE

Admission to the B.A.S. degree program is restricted to students holding an A.A.S. 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 for nonresident applicants.

ADVISING

New incoming and transfer students should seek initial advising from the academic advisor in the Dean's Office. CTAS students are then assigned faculty advisors who assist them with planning a program of study in the department of their major. The college requires that students consult with advisors before registering each semester. Advisors should be made aware of any employment obligations or special circumstances that may affect a student's ability to successfully handle a full course load. CTAS students may register for a maximum of 19 semester hours per semester. Any student wishing to take more than the maximum must petition the CTAS Standards Committee and have an approval on file before registering for an overload.

GRADUATION REQUIREMENTS

Students must meet all university graduation requirements given in "University Graduation Requirements," page 81, as well as degree requirements of their major in the College of Technology and Applied Sciences. For detailed information on the degree requirements of a major in CTAS, refer to that department's individual description.

COLLEGE STANDARDS

Pass/Fail Grades

The College of Technology and Applied Sciences does not offer pass/fail grades. Courses graded on a pass/fail basis do not count toward degree credit in CTAS. Students may request credit for pass/fail courses by petitioning the CTAS Standards Committee.

Entry into Upper-Division Courses (B.S. Degree)

Before enrolling in courses at the 300 level and above, CTAS students must be in the professional status within the college. Students who are not in good academic standing must petition the CTAS Standards Committee. Students enrolled in another ASU college may not register for any 300- and 400-level CTAS courses unless those courses are required in the degree program and the students have the proper course prerequisites.

ACADEMIC STANDARDS

Retention. A student is expected to make satisfactory progress toward completion of degree requirements to continue enrollment in the College of Technology and Applied Sciences. Any one of the following conditions is considered unsatisfactory progress and results in the student's being placed on probationary status:

1. a semester with a GPA less than or equal to 1.50;
2. two successive semesters with GPAs less than 2.00; or
3. an ASU cumulative GPA less than 2.00.

A student on probation is subject to disqualification if (1) a semester GPA of 2.25 is not attained and the

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cumulative GPA is below 2.00 at the end of the probationary semester or (2) the student is placed on probation for two consecutive semesters and is unable to achieve the standard GPAs stated in number one.

Students on academic probation are not allowed to register for more than 13 semester hours. Probationary students may not register for the semester following the semester in which they were declared probationary without a special permit from an advisor in the dean's office. Special permits are given only after the registrar records grades for the current semester.

Disqualification. During a semester on academic probation, a student who fails to meet the retention standards is disqualified. Students may request a review of their disqualification status by contacting the CTAS associate dean in the Academic Center Building (CNTR), room 10. Any disqualified student who is accepted by another college at ASU may not register for courses in CTAS unless the courses are required in the new major. Disqualified students who register for courses in CTAS may be withdrawn from these courses any time during the semester.

Reinstatement. The college does not accept an application for reinstatement until the disqualified student has remained out of the college for at least a 12-month period. Merely having remained in disqualified status for this period of time does not, in itself, constitute a basis for reinstatement. Proof of ability to do satisfactory college work in the chosen discipline is required; for example, completing pertinent courses in the discipline at a community college with higher-than-average grades.

STUDENT RESPONSIBILITIES

Course Prerequisites. Students should consult the *Schedule of Classes* and the catalog for course prerequisites. Students who register for courses without the designated prerequisites may be withdrawn without their consent at any time before the final examination. The instructor, the chair of the department, or the dean of the college may initiate such withdrawals. In such cases, students do not receive monetary reimbursement. Such withdrawals are considered to be unrestricted as described under "Unrestricted Course Withdrawal," page 75, and do not count against the number of restricted withdrawals allowed.

SPECIAL PROGRAMS

Academic Recognition. Students completing baccalaureate degree requirements receive the appropriate honors designations on their diplomas consistent with the requirements specified by the university.

Students in the college are encouraged to seek information concerning entry into honor societies that enhance their professional stature. Tau Alpha Pi is the engineering technology honor society, and Alpha Eta Rho is available for aeronautical management technology students.

Barrett Honors College. The College of Technology and Applied Sciences participates in the programs of the Barrett Honors College, which provides enhanced educational experiences to academically superior undergraduate students. Participating students can major in any academic program. For more information see "The Barrett Honors College," page 120.

Scholarships. Information and applications for academic scholarships for continuing students may be obtained by contacting departmental offices. Other scholarships may be available through the university Student Financial Assistance Office.

ROTC Students. Students pursuing a commission through either the Air Force or Army ROTC program must take from 12 to 20 semester hours of courses in the Department of Aerospace Studies or Department of Military Science. To preclude excessive overloads, these students should plan on at least one additional semester to complete degree requirements. Because of accreditation requirements, aerospace studies (AES) or military science (MIS) courses are not accepted in the engineering technology majors.

ENGINEERING TECHNOLOGY CORE (ETC)

ETC 100 Languages of Technology. (4)
fall and spring
Introduces computer-aided design, programming, modeling, and technical documentation. Lecture, lab.
General Studies: CS

ETC 191 First-Year Seminar. (1–3)
selected semesters

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

ETC 211 Applied Engineering Mechanics: Statics. (3)
fall and spring
Vectors, forces and moments, force systems, equilibrium, analysis of basic structures and structural components, friction, centroids, and moments of inertia. Prerequisites: MAT 260; PHY 111, 113.

ETC 340 Applied Thermodynamics and Heat Transfer. (3)
fall and spring
Thermodynamic systems and processes, first and second laws of thermodynamics, properties of pure substances, and applications to heat engines and special systems. Fundamentals of conduction, radiation, and convection. Prerequisites: MAT 261; PHY 112, 114.

ETC 492 Honors Directed Study. (1–6)
selected semesters

ETC 493 Honors Thesis. (1–6)
selected semesters

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

GLOBAL TECHNOLOGY AND DEVELOPMENT (GTD)

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

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 56.

SECURITY ENGINEERING TECHNOLOGY (SET)

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

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 56.

Department of Aeronautical Management Technology

eastair.east.asu.edu
480/727-1381
SIM 205

William K. McCurry, Chair

Professors: Gesell, McCurry

Associate Professors: Jackson, Karp, Turney

Assistant Professor: Pearson

Lecturers: O'Brien, Tripp

PURPOSE

Graduates are prepared for entry into the aviation and aerospace industry in productive, professional employment or, alternatively, for graduate study. Curricula emphasize principles underlying the application of technical knowledge as well as current technology, preparing the graduate to adapt to the rapid and continual changes in aviation and aerospace technology.

ADMISSION

New and transfer students who have been admitted to the university and who meet the requirements for admission to the College of Technology and Applied Sciences may be admitted without separate application to the Department of Aeronautical Management Technology only in the Bachelor of Applied Sciences concentrations or to the Bachelor of Science air transportation management concentration. Admission to the Bachelor of Science professional flight concentration requires an additional admission process. Transfer credits are reviewed by department faculty advisors. To be acceptable for department credit, transfer courses must be equivalent in both content and level of offering. No flight experience or theoretical training courses beyond the Private Pilot Certificate are accepted.

DEGREES

The faculty in the Department of Aeronautical Management Technology offer a B.S. degree in Aeronautical Management Technology with concentrations in professional flight and air transportation management. A B.A.S. degree in Applied Science is also offered with concentrations in aviation maintenance management technology and aviation management technology.

A Master of Science in Technology degree is offered for graduate study with concentrations in aviation management technology and aviation human factors. For more information, see the *Graduate Catalog.*

AERONAUTICAL MANAGEMENT TECHNOLOGY—B.S.

The Aeronautical Management Technology curricula are designed to provide a thorough technical background combined with an interdisciplinary general university education. The graduate is prepared to assume responsibilities in a wide area of managerial and technically related areas of aviation. The student gains a background in aircraft structures, reciprocating and turbine engines, aircraft performance and design, management skills, business principles, systems analysis, and a variety of course work specific to aircraft flight, airport operations, and air transportation systems. The degree offers two concentrations: professional flight and air transportation management, both of which have been accredited by the Council on Aviation Accreditation. The concentrations are described separately on the following pages.

All degree requirements are shown on curriculum check sheets for the concentrations that are available by visiting the department or by accessing the department Web site at eastair.east.asu.edu. Requirements include First-Year Composition, university General Studies (see "General Studies," page 85), and the Aeronautical Management Technology Core. Note that all three General Studies awareness areas are required. Consult an advisor for an approved list of courses. Refer to individual concentration degree requirements for additional required courses. Students must complete each Aeronautical Management Technology course with a grade of "C" or higher.

Aeronautical Management Technology Core

AMT	101	Introduction to Aeronautical Management Technology 1
AMT	182	Private Pilot Ground School 3
AMT	201	Air Traffic Control 3
AMT	220	Aviation Meteorology 3
AMT	280	Aerospace Structures, Materials, and Systems 4
AMT	287	Aircraft Powerplants 4
AMT	308	Air Transportation *G* 3
AMT	350	Aircraft Design, Performance, and Avionics 3
AMT	396	Aviation Professional 1
AMT	410	Aviation Safety and Human Factors 3
AMT	442	Aviation Law/Regulations 3
ETC	100	Languages of Technology *CS* 4
TWC	400	Technical Communications *L* 3
Total		38

Professional Flight Concentration

Flight training is certified by the Federal Aviation Administration. Students in the professional flight concentration must pass an FAA medical examination before flying solo. An FAA Class I medical examination is required for admission. It is recommended that a medical examination be completed by an aviation medical examiner of the student's choice before application for admission.

This program is designed for students who are seriously interested in becoming professional airline pilots. Because of limited space, the program selection process is

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 85.

academically competitive. Only those applicants who meet the subject matter and quality requirements and who submit their applications by the appropriate deadlines will be considered for admission.

The ASU Professional Flight program is the initial phase of the qualification/application process to become an airline first officer. Individuals seeking admission to the program will need to participate in a secondary application process. The secondary process will assess a candidate's FAA-certified First Class medical qualification; driving record; work and/or personal references; and cognitive, psychomotor skill, and psychological test results. It will also include a personal interview. The secondary application deadlines are typically nine months prior to the beginning of the appropriate semester.

Total program costs, which include aircraft, flight instructor time, flight training devices, simulator time, tests, fees, and tuition, require careful financial planning. Students must make satisfactory progress throughout both the flight and academic areas to be considered for continued advancement in the program. To proceed at a satisfactory pace through the flight training program, students should expect and plan to fly during the winter intersession and the summer session to complete the program.

For more information, requirements, and specific application procedures, access the AMT Department Web site at eastair.east.asu.edu.

Flight instruction costs are not included in university tuition and fees. The estimated cost of flight training is $45,000 in addition to normal university costs.

Degree Requirements

Professional flight students are required to complete 128 semester hours with a 2.00 cumulative GPA, including a minimum of 50 semester hours of upper-division courses. All degree requirements are shown on the student's curriculum check sheet.

Concentration Requirements

In addition to the required courses for First-Year Composition, university General Studies (see "General Studies," page 85), and the Aeronautical Management Technology core, the following additional courses are required for the professional flight management concentration:

AMT	100	Flight Safety I 1
AMT	200	Flight Safety II 2
AMT	214	Commercial/Instrument Ground School I 3
AMT	300	Flight Safety III 2
AMT	322	Commercial/Instrument Ground School II 3
AMT	382	Air Navigation 3
AMT	385	Flight Instructor Ground School 3
AMT	387	Multiengine Pilot Ground School 1
AMT	392	Flight Instructor Instrument Ground School 3
AMT	400	Flight Safety IV 1
AMT	408	National Aviation Policy 3
AMT	482	Airline Instrument Procedures 3
AMT	489	Airline Administration 3
AMT	496	Airline Aircraft Systems Capstone 3
ECN	111	Macroeconomic Principles *SB* 3
		or ECN 112 Microeconomic Principles *SB* (3)
PGS	101	Introduction to Psychology *SB* 3
STP	420	Introductory Applied Statistics *CS* 3
		Technical electives or internship 6
		Total 49

Suggested Course Pattern for Freshmen

First Semester

AMT	100	Flight Safety I 1
AMT	101	Introduction to Aeronautical Management Technology 1
AMT	182	Private Pilot Ground School 3
AMT	220	Aviation Meteorology 3
ENG	101	First-Year Composition 3
MAT	260	Technical Calculus I *MA* 3
		Total 14

Second Semester

AMT	214	Commercial/Instrument Ground School I 3
AMT	322	Commercial/Instrument Ground School II 3
ENG	102	First-Year Composition 3
ETC	100	Languages of Technology *CS* 4
PHY	111	General Physics *SQ** 3
PHY	113	General Physics Laboratory *SQ** 1
		Total 17

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

Air Transportation Management Concentration

The air transportation management concentration is designed to prepare graduates for managerial and supervisory positions throughout the air transportation industry. An in-depth technical education is included along with broad exposure to business and management courses. This program of study is interdisciplinary in nature and prepares the aeronautical career-oriented student for positions such as air traffic control specialist, air carrier manager, airport manager, and general aviation operations manager.

Degree Requirements

Air transportation management students are required to complete 128 semester hours with a 2.00 cumulative GPA, including a minimum of 50 semester hours of upper-division courses. All degree requirements are shown on the student's curriculum check sheet.

Concentration Requirements

In addition to the required courses for First-Year Composition, university General Studies (see "General Studies," page 85), and the Aeronautical Management Technology core, the following additional courses are required in the airway science management concentration:

ACC	230	Uses of Accounting Information I 3
AMT	408	National Aviation Policy 3
AMT	444	Airport Management and Planning 3
AMT	489	Airline Administration 3
AMT	491	Aviation Management Capstone 3
ECN	111	Macroeconomic Principles *SB* 3
		or ECN 112 Microeconomic Principles *SB* (3)
IMC	346	Management Dynamics 3
ITM	343	Occupational Safety and Ergonomics 3
ITM	430	Ethical Issues in Technology 3
ITM	452	Industrial Human Resource Management 3
ITM	456	Introduction to Organized Labor 3
ITM	480	Organizational Effectiveness 3
PGS	101	Introduction to Psychology *SB* 3
STP	420	Introductory Applied Statistics *CS* 3

Technical electives or internship	7
Total	49

Suggested Course Pattern for Freshmen

First Semester

AMT 101 Introduction to Aeronautical Management Technology	1
AMT 182 Private Pilot Ground School	3
AMT 220 Aviation Meteorology	3
ENG 101 First-Year Composition	3
MAT 260 Technical Calculus I *MA*	3
Total	13

Second Semester

ENG 102 First-Year Composition	3
ETC 100 Languages of Technology *CS*	4
PGS 101 Introduction to Psychology *SB*	3
PHY 111 General Physics *SQ**	3
PHY 113 General Physics Laboratory *SQ**	1
General Studies elective	3
Total	17

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

APPLIED SCIENCE—B.A.S.

The Bachelor of Applied Science degree is a "capstone" degree for the Associate of Applied Science degree. The B.A.S. degree exposes students to advanced concepts and diverse critical thinking skills that prepare students for future career opportunities and professional advancement.

Admission

Admission to the B.A.S. degree program is restricted to students holding an A.A.S. 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 for nonresident applicants.

Degree Requirements

The B.A.S. degree in the College of Technology and Applied Sciences consists of 60 semester hours of upper-division (300 level and above) courses, with 30 hours in residence.

A.A.S. degree	60
Assignable credit	6
B.A.S. core	15
General Studies	19
Technical concentration	20
Total	120

General Studies Curriculum

The B.A.S. curriculum builds on the general education content of the A.A.S. degree. Additional General Studies (L, CS, and awareness areas) are met with courses in the core 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 prerequisite courses needed to succeed in the program. The courses are determined by the student and the advisor.

B.A.S. Core

The area core is focused on management and organization, professional communication, quantitative analysis, and computer competency.

GIT 335 ST: Computer Systems Technology	3
IMC 346 Management Dynamics or ITM 344 Industrial Organization (3) or ITM 452 Industrial Human Resource Management (3)	3
IMC 470 Project Management	3
STP 420 Introductory Applied Statistics *CS*	3
TWC 400 Technical Communications *L*	3
Total	15

Technical Concentrations

Aviation Maintenance Management Technology. This concentration is for those students who have completed an airframe and powerplant certification as part of their A.A.S. degree. Students receive an orientation in management practices that prepares them for progressively more responsible positions in the field of aviation maintenance management.

Aviation Management Technology. This concentration is for those students who have received training and education in some aspect of the air transportation industry (other than aviation maintenance), such as flight certificates and ratings as part of their A.A.S. degree. Students receive an orientation in management practices that prepares them for progressively more responsible positions in the field of aviation management.

STUDENT ORGANIZATIONS

The department hosts the local chapter of Alpha Eta Rho, an international professional aviation fraternity open to all students with an interest in aviation. The American Association for Airport Executives is open to all students with an interest in airport management. The Student Advisory Council is a leadership organization that facilitates student communication with faculty, departmental leaders, and university administrative personnel. The Precision Flight Team competes in regional and national flying safety competitions. The Women in Aviation International organization is open to all students.

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 85.

AERONAUTICAL MANAGEMENT TECHNOLOGY (AMT)

AMT Note 1. Flight instruction costs are not included in university tuition and fees.

AMT 100 Flight Safety I. (1)
fall, spring, summer
Supervised private pilot flight training and flight safety briefings. Requires continuous enrollment until completion of the FAA Private Pilot Certificate. Lecture, lab. Fee. See AMT Note 1. Pre- or corequisites: both AMT 182 and 220 (or their equivalents).

AMT 101 Introduction to Aeronautical Management Technology. (1)
fall and spring
Facilitates entry into Aeronautical Management Technology programs. Emphasizes *General Catalog* and concentration requirements, registration, careers, and ASU East facilities.

AMT 182 Private Pilot Ground School. (3)
fall, spring, summer
Ground school preparation for Private Pilot Certificate. Aerodynamics, navigation, performance, and regulations. Lecture, lab. Corequisite: AMT 220.

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

AMT 200 Flight Safety II. (2)
fall, spring, summer
Supervised commercial instrument flight training and safety briefings. Requires continuous enrollment until completion of FAA Commercial Pilot Certificate with Instrument Rating. Lecture, lab. Fee. See AMT Note 1. Prerequisites: AMT 100; Private Pilot Certificate. Pre- or corequisite: AMT 214 or 322.

AMT 201 Air Traffic Control. (3)
fall
Ground and air operations; weather services communications and routing; flight plans, IFR operations, departures and arrivals; and airport conditions and emergencies. Prerequisite: AMT 182.

AMT 214 Commercial/Instrument Ground School I. (3)
fall and spring
Ground school leading to FAA Instrument Pilot Rating/Commercial Pilot Certificate (part 1 of 2). 10 hours ground trainer included. Lecture, lab. Fee. Pre- or corequisites: AMT 182, 220.

AMT 220 Aviation Meteorology. (3)
fall, spring, summer
Evaluation, analysis, and interpretation of atmospheric phenomena. Low- and high-altitude weather from the pilot's viewpoint. Corequisite: AMT 182.

AMT 280 Aerospace Structures, Materials, and Systems. (4)
fall
Basic aerodynamics, incompressible/compressible airflow, wind tunnel testing, wing theory; analysis of aircraft structures; properties and applications of materials, and aircraft systems. Lecture, lab. Fee. Prerequisites: PHY 111, 113.

AMT 287 Aircraft Powerplants. (4)
spring
Theory and performance analysis of gas turbine and reciprocating aircraft engines. Engine accessories, systems, and environmental control. Lecture; lab. Prerequisites: PHY 111, 113.

AMT 300 Flight Safety III. (2)
fall, spring, summer
Supervised instructor flight training and safety briefings. Requires continuous enrollment until completion of FAA Flight Instructor Certificate with Instrument Instructor Rating. Lecture, lab. Fee. See AMT Note 1. Prerequisite: AMT 200. Pre- or corequisite: AMT 385.

AMT 308 Air Transportation. (3)
fall
Studies the historical and international development of air transportation and its social, political, and economic impact upon global interrelationships. Prerequisite: junior standing.
General Studies: G

AMT 322 Commercial/Instrument Ground School II. (3)
fall and spring
Ground school leading to FAA Instrument Pilot Rating/Commercial Pilot Certificate (part 2 of 2). 10 hours ground trainer included. Lecture, lab. Fee. Prerequisite: AMT 100 or instructor approval. Pre- or corequisite: AMT 214.

AMT 350 Aircraft Design, Performance, and Avionics. (3)
spring
Fundamentals of aircraft design, turboprop and turbojet performance, principles of electricity, AC/DC circuits, and operation of transport category aircraft avionics systems. Lecture, lab. Prerequisites: AMT 280, 287.

AMT 360 Introduction to Helicopter Technology. (3)
selected semesters
Introduces the working functions of modern rotary wing aircraft, rotary wing flight theory, aerodynamics, controls, flight, and power requirements. Prerequisites: PHY 111, 113.

AMT 370 Air Freight Operations. (3)
selected semesters
Air freight operations in National Aviation System; ramp operations, loading, weight and balance, and administration of airside and groundside operations. Prerequisite: junior standing.

AMT 382 Air Navigation. (3)
spring
Theory and application of modern advanced navigation and flight instrument systems. Introduces crew resource management in multiplace cockpits. Lecture, lab. Prerequisite: AMT 322. Pre- or corequisite: AMT 200 or instructor approval.

AMT 385 Flight Instructor Ground School. (3)
fall and spring
Ground school in preparation for the FAA Flight Instructor Certificate. Lecture, lab. Pre- or corequisite: AMT 200.

AMT 387 Multiengine Pilot Ground School. (1)
fall and spring
Ground school preparation for the FAA Multiengine Rating. Lecture, lab. Fee. See AMT Note 1. Prerequisite: AMT 200 or instructor approval.

AMT 391 Multiengine Instructor Ground School. (2)
selected semesters
Ground school preparation for the FAA Multiengine Flight Instructor Rating. Lecture, lab. See AMT Note 1. Prerequisites: AMT 300, 387, 400.

AMT 392 Flight Instructor Instrument Ground School. (3)
fall and spring
Ground school preparation for the FAA Instrument Flight Instructor Rating. Lecture, lab. See AMT Note 1. Prerequisites: AMT 200, 385.

AMT 395 Multiengine Land, Airplane Flight Instructor Rating. (1)
selected semesters
Normal and emergency flight operations. Instruction techniques and procedures for light multiengine land, airplane. Requires CFIAME Rating for course completion. Lecture, lab. See AMT Note 1. Prerequisite: AMT 391.

AMT 396 Aviation Professional. (1)
fall and spring
Career focus for management and flight students, including internships, résumé writing, interviews, and employment search in aviation industry. Prerequisite: junior standing.

AMT 400 Flight Safety IV. (1)
fall, spring, summer
Multiengine and crew training and safety briefings. Requires continuous enrollment until completion of rating and multicrew training. Lecture, lab. Fee. See AMT Note 1. Prerequisite: AMT 300. Pre- or corequisite: AMT 387.

AMT 408 National Aviation Policy. (3)
fall
Examines aviation and airspace policies and policy process, including agencies involved in formulation, implementation, and evaluation of aviation policy. Prerequisite: junior standing.

AMT 410 Aviation Safety and Human Factors. (3)
fall
Aviation accident prevention, human factors, life support, fire prevention, accident investigation, and crash survivability. Development and

analysis of aviation safety programs. Prerequisites: junior standing; completion of 1 semester of General Studies L requirement.

AMT 412 Air Transportation Research. (1)
fall
Surveys practical research methodology in use in the air transportation industry. Topics include planning and design considerations.

AMT 419 Aviation Logistical Management. (3)
spring
Surveys FAA requirements for personnel and facilities. Topics include parts supply, quality control, product liability, pricing, profitability, and administration. Lecture, lab. Prerequisite: junior standing.

AMT 442 Aviation Law/Regulations. (3)
fall
Aviation within context of U.S. Common Law system. Public law, administrative rule making, sovereignty, enforcement, and case law analysis. Prerequisite: junior standing.

AMT 444 Airport Management and Planning. (3)
spring
Orientation to administration and management of modern public airports, including overview of planning, funding, and development of airport facilities. Prerequisite: junior standing.

AMT 482 Airline Instrument Procedures. (3)
fall
Advanced instrument flight using airline instrument procedures and airline crew and cockpit resource management. Lecture, lab. Prerequisites: a combination of AMT 200 and 322 and 382 or only instructor approval.

AMT 484 Aeronautical Internship. (1–12)
fall, spring, summer
Work experience assignment with aerospace industry commensurate with student's program. Special project guidance by industry with university supervision. Prerequisites: advisor approval; junior standing.

AMT 489 Airline Administration. (3)
spring
Administrative organizations, economics of airline administration, operational structure, and relationship with federal government agencies. Prerequisite: junior standing.

AMT 490 Regional Jet Operations. (3)
fall and spring
Regional jet aircraft systems and flight procedures. Includes theoretical education for regional airline commercial passenger operations. Lecture, lab. Prerequisites: professional pilot major; instructor approval.

AMT 491 Aviation Management Capstone. (3)
spring
Integration and overview of management tools, current business problems and topics related to aviation industry. Group project with industry and government and business partners. Prerequisite: senior standing.

AMT 494 Special Topics. (1–4)
selected semesters

AMT 496 Airline Aircraft Systems Capstone. (3)
spring
Commercial airline aircraft systems and flight procedures. Includes theoretical education for large, commercial passenger aircraft. Lecture, lab. Prerequisite: senior standing.

AMT 498 Pro-Seminar. (1–7)
selected semesters

AMT 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 56.

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 56.

Department of Electronics and Computer Engineering Technology

www.east.asu.edu/ctas/ecet
480/727-1029
TECH 101

Timothy E. Lindquist, Chair

Professors: Lindquist, McHenry, Munukutla, Robertson

Associate Professors: Koehnemann, Macia, Millard, Sundararajan, Zeng

Assistant Professor: Gannod

Senior Lecturer: Whitehouse

PURPOSE

The Department of Electronics and Computer Engineering Technology prepares graduates to apply scientific and engineering knowledge, methods, and techniques in support of technological applications in electronics and computer engineering activities and processes.

The engineering technology curriculum is applications oriented and builds upon a background of applied science and mathematics, including the concepts and applications of calculus. Graduates are prepared to produce practical, workable, and safe solutions to technologically challenging problems. Graduates are employed in the electronics and computer industries with responsibilities such as designing, installing and operating technical systems, analyzing and (re) engineering systems that embed computer hardware and software for unique applications, developing and producing products, managing manufacturing processes, and providing customer support for technical products and systems.

DEGREES

The faculty in the Department of Electronics and Computer Engineering Technology offer the B.S. degree in Electronics Engineering Technology (B.S./EET) and the B.S. degree in Computer Engineering Technology (B.S./CET).

For students holding an A.A.S. degree, the department offers the B.A.S. degree with a major in Applied Science. Five concentrations are available: computer systems administration, instrumentation, microcomputer systems, semiconductor technology, and software technology applications.

A Master of Science in Technology degree program with concentrations in electronics engineering technology, computer systems engineering technology, instrumentation and

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 85.

measurement technology, and microelectronics engineering technology is available for qualified B.S. graduates. See the *Graduate Catalog* for more information.

Electronics Engineering Technology—B.S.

Students interested in the B.S. degree in Electronics Engineering Technology may choose to specialize in one of the following three concentrations: electronic systems, microelectronics, and telecommunications.

The *electronic systems* concentration is aimed at preparing persons for careers in control, electronics, instrumentation, and power systems applications. This concentration allows a student to develop a broad-based knowledge of electrical/electronic fundamentals with an applications perspective.

The *microelectronics (UET)* concentration combines applied electronics, monolithic and hybrid integrated circuit processing and applications, device and component fabrication, and manufacturing. The objective of this concentration is to prepare persons to assume positions in the area of microelectronics manufacturing with immediately applicable knowledge as well as to develop a strong foundation of electronic fundamentals and methods. Graduates of this concentration secure positions in processing, manufacturing operations, and applications areas in industry as members of the diverse scientific engineering team.

The *telecommunications* concentration encompasses the fundamentals of information and signal processing, modern bandwidth-efficient digital radio analysis with RF and microwave circuits and systems. Applications include telephone pulse code modulation, cable TV, fiber optic links, and satellite transmission circuits and systems.

The departmental curriculum is organized into two categories, technical studies and General Studies. Technical studies consist of core areas and the concentration specialty area. General Studies consist of courses selected to meet the university General Studies requirement (see "General Studies," page 85) as well as the math/science requirement of TAC of ABET. Note that all three General Studies awareness areas are required. Consult an advisor for an approved list of courses.

A minimum of 50 upper-division hours is required, including at least 24 semester hours of EET, CET, or UET upper-division hours to be taken at ASU. A minimum of 128 semester hours with a 2.00 cumulative GPA is required for graduation. Complete program of study guides with typical four-year patterns are available from the department.

The General Studies portion of the B.S./EET curriculum has been carefully structured to meet the specific requirements of the university and to include the content required by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, the professional accrediting agency for such curricula.

ELECTRONICS ENGINEERING TECHNOLOGY—B.S. DEGREE REQUIREMENTS

In addition to the courses listed for First-Year Composition and university General Studies, the following courses are required.

Engineering Technology Core

The following courses are required as part of the engineering technology core:

ETC	100	Languages of Technology *CS*	4
ETC	211	Applied Engineering Mechanics: Statics	3
ETC	340	Applied Thermodynamics and Heat Transfer	3
Total			10

Electronics Engineering Technology Core and Major Requirements

CET	100	Object-Oriented Software Development I	3
CET	150	Digital Systems I *CS*	4
CET	350	Digital Systems II	4
CET	354	Microcomputer Architecture and Programming	4
EET	208	Electric Circuit Analysis I	4
EET	301	Electric Circuit Analysis II	4
EET	310	Electronic Circuits I	4
EET	372	Communication Systems	4
EET	396	Professional Orientation*	1
EET	407	Energy Conversion and Applications	4
EET	410	Electronic Circuits II	4
UET	331	Electronic Materials	3
UET	415	Electronic Manufacturing Engineering Principles	3
Total			46

* Students must take EET 396 the semester in which they are enrolled in the 87th hour of credit (ASU plus transfer hours). If the 87th hour occurs in summer session, students should take EET 396 the prior spring semester.

Electronics Engineering Technology Concentrations

Electronic Systems

CET	383	Shell and Script Programming with UNIX	3
EET	406	Control System Technology	4
EET	430	Instrumentation Systems	4
EET	460	Power Electronics	4
Approved technical electives			7
Total			22

Microelectronics

CHM	116	General Chemistry *SQ*	4
UET	416	Dopant Control Technology	3
UET	417	Monolithic Integrated Circuit Laboratory	2
UET	418	Systems on Silicon	4
UET	421	IC Device Characterization	3
UET	432	Semiconductor Packaging and Heat Transfer	3
Approved technical elective			3
Total			22

Telecommunications

CET	473	Digital/Data Communications	4
EET	304	Transmission Lines in Computer Networks	3
EET	401	Digital Signal Processing for Multimedia	3
EET	470	Communication Circuits	4
Approved technical electives			7
Total			21

Electronics Engineering Technology
Program of Study
Typical First- and Second-Year Sequence

First Year

First Semester

CET	150	Digital Systems I *CS*	4
ENG	101	First-Year Composition	3
MAT	170	Precalculus *MA*	3
PHY	111	General Physics *SQ*[1]	3
PHY	113	General Physics Laboratory *SQ*[1]	1
Total			14

Second Semester

ENG	102	First-Year Composition	3
ETC	100	Languages of Technology *CS*	4
MAT	260	Technical Calculus I *MA*	3
PHY	112	General Physics *SQ*[2]	3
PHY	114	General Physics Laboratory *SQ*[2]	1
HU, SB, or awareness area course			3
Total			17

Second Year

First Semester

CET	256	C Programming for Engineering Technology	3
CHM	113	General Chemistry *SQ*	4
ECN	111	Macroeconomic Principles *SB*	3
EET	208	Electric Circuit Analysis I	4
MAT	261	Technical Calculus II *MA*	3
Total			17

Second Semester

EET	301	Electric Circuit Analysis II	4
ETC	211	Applied Engineering Mechanics: Statics	3
MAT	262	Technical Calculus III *MA*	3
L1 course			3
HU, SB, or awareness area course			3
Total			16

[1] Both PHY 111 and 113 must be taken to secure SQ credit.
[2] Both PHY 112 and 114 must be taken to secure SQ credit.

COMPUTER ENGINEERING TECHNOLOGY—B.S. DEGREE REQUIREMENTS

Students interested in the B.S. degree in Computer Engineering Technology (B.S./CET) may choose to specialize in one of the following three concentrations: computer hardware technology, embedded systems technology, and software technology.

The *computer hardware technology* concentration is designed to provide students with an opportunity to develop broad-based knowledge and skills in digital systems, interfacing techniques and computer hardware applications.

The *embedded systems technology* concentration prepares students for the application, interconnection, design, analysis, and realization of systems that involve both software and hardware components. This concentration balances the hardware concerns of computer engineering with the processes and technologies involved in producing reliable software solutions.

The *software technology* concentration prepares students for careers in software applications in the context of an industry in which software solutions are increasingly distributed, using object-oriented languages and frameworks, and in which the Internet, Web and wireless technologies play an important role.

Each student must satisfy the courses listed for First-Year Composition and the university General Studies requirement. In addition, the following courses are required.

Lower-Division Core

CET	100	Object-Oriented Software Development I	3
CET	150	Digital Systems I *CS*	4
CET	200	Object-Oriented Software Development II	3
EET	208	Electric Circuit Analysis I	4
ETC	100	Languages of Technology *CS*	4
Core total			18

Major

CET	326	Programming Languages for Technology with C/C++ and Visual BASIC	4
CET	354	Microcomputer Architecture and Programming	4
CET	364	Computer Architecture	3
CET	383	Shell and Script Programming with UNIX	3
EET	396	Professional Orientation	1
UET	415	Electronic Manufacturing Engineering Principles	3
Total			18

Computer Hardware Technology Concentration

CET	350	Digital Systems II	4
CET	452	Digital Logic Applications	4
CET	456	Assembly Language Applications	3
CET	458	Digital Computer Networks	3
CET	473	Digital/Data Communications	4
CET	486	Hardware Description Languages: VHDL	3
EET	301	Electric Circuit Analysis II	4
EET	310	Electronic Circuits I	4
EET	372	Communication Systems	4
EET	401	Digital Signal Processing for Multimedia	3
Technical electives			9
Total			45

Embedded Systems Technology Concentration

CET	230	Applied Data Structures	3
CET	350	Digital Systems II	4
CET	386	Operating Systems Principles	3
CET	420	Foundations of Distributed Web-Based Applications in Java	3
CET	452	Digital Logic Applications	4
CET	456	Assembly Language Applications	3
CET	458	Digital Computer Networks or CET 459 Internet Networking Protocols (3)	3
CET	486	Hardware Description Languages: VHDL	3
EET	301	Electric Circuit Analysis II	4
EET	401	Digital Signal Processing for Multimedia	3
Technical electives			12
Total			45

Software Technology Concentration

CET	230	Applied Data Structures	3
CET	386	Operating Systems Principles	3
CET	400	Software Engineering Technology	3
CET	420	Foundations of Distributed Web-Based Applications in Java	3

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 85.

Choose two of the following courses 6
CET 425 Server Software Programming (3)
CET 427 Distributed Objects with Java and CORBA (3)
CET 428 Web-Client User Interface Programming (3)
CET 441 Software for Personal Digital Assistants (3)
CET 433 Database Technology 3
CET 459 Internet Networking Protocols 3
CET 488 Systems Administration of UNIX 3
CET 489 Network Administration with TCP/IP 3
Technical electives 15
Total 45

Computer Engineering Technology
Program of Study
Typical First- and Second-Year Sequence

First Year

First Semester
ENG 101 First-Year Composition 3
ETC 100 Languages of Technology *CS* 4
MAT 170 Precalculus *MA* 3
PHY 111 General Physics *SQ*[1] 3
PHY 113 General Physics Laboratory *SQ*[1] 1
Total 14

Second Semester
CET 100 Object-Oriented Software Development I 3
ENG 102 First-Year Composition 3
MAT 260 Technical Calculus I *MA* 3
PHY 112 General Physics *SQ*[2] 3
PHY 114 General Physics Laboratory *SQ*[2] 1
Total 13

Second Year

First Semester
CET 150 Digital Systems I *CS* 4
CET 200 Object-Oriented Software Development II 3
CHM 113 General Chemistry *SQ* 4
ECN 111 Macroeconomic Principles *SB* 3
MAT 261 Technical Calculus II *MA* 3
Total 17

Second Semester
CET 230 Applied Data Structures 3
CET 350 Digital Systems II 4
CET 383 Shell and Script Programming with UNIX 3
EET 208 Electric Circuit Analysis I 4
MAT 243 Discrete Mathematical Structures 3
or MAT 262 Technical Calculus III *MA* (3)
Total 17

[1] Both PHY 111 and 113 must be taken to secure SQ credit.
[2] Both PHY 112 and 114 must be taken to secure SQ credit.

APPLIED SCIENCE—B.A.S.

The Bachelor of Applied Science degree is a "capstone" degree for the Associate of Applied Science degree. The B.A.S. 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 B.A.S. degree program is restricted to students holding an A.A.S. 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 for nonresident applicants.

Degree Requirements

The B.A.S. degree in the College of Technology and Applied Sciences consists of 60 semester hours of upper-division (300-level and above) courses, with 30 semester hours in residence.

A.A.S. degree 60
Assignable credit 6
B.A.S. core 15
General Studies 19
Technical concentration 20
Total 120

General Studies Curriculum

The B.A.S. curriculum builds on the general education content of the A.A.S. 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 allows space in the curriculum for prerequisite courses needed to succeed in the program. The courses are determined by the student and the advisor.

B.A.S. Core

The area core focuses on management and organization, professional communication, quantitative analysis, and computer competency. The B.A.S. core consists of five courses and varies depending upon concentration.

Software Technology Applications Core
CET 354 Microcomputer Architecture and Programming 4
CET 386 Operating Systems Principles 3
EET 494 ST: Data Analysis 3
IMC 346 Management Dynamics 3
TWC 400 Technical Communications *L* 3
Total 16

Technical Concentrations

Computer Systems Administration. This concentration is designed to broaden and provide more in-depth knowledge in computer administration. Graduates from this concentration will be prepared to specify, install, maintain, and administer various computer and networking systems.

Instrumentation. This concentration studies instrumentation, power systems, and computer systems. The curriculum prepares the graduate to specify and prepare solutions for a wide variety of electrical and electronic instrumentation systems. Graduates from this concentration are primed for

technical leadership positions in the various segments of the electronics industry.

Microcomputer Systems. This concentration prepares graduates for product specification and marketing positions in microcomputer applications. The B.A.S. degree provides additional technical skills in microcomputer systems to prepare graduates for responsible and productive positions in the support of computer systems.

Semiconductor Technology. This concentration prepares graduates for careers in the semiconductor industry. The B.A.S. degree provides graduates with an understanding of integrated circuit processing, mask making, packaging, and the software tools used in this industry.

Software Technology Applications. This concentration prepares graduates for careers in the software industry. The B.A.S. degree furnishes additional technical expertise in software technology to prepare graduates to design, specify, and provide software solutions for industry and the consumer market.

COMPUTER ENGINEERING TECHNOLOGY (CET)

CET 100 Object-Oriented Software Development I. (3)
fall
Basic concepts of object-oriented analysis, design, and programming using Java. Basic Java variables, expressions, arrays, statements, methods, and classes. Prerequisite: ETC 100.

CET 150 Digital Systems I. (4)
fall and spring
Number systems, Boolean algebra, combinational logic, K-maps, flip-flops, sequential circuits, state machines, and minimization techniques.
General Studies: CS

CET 191 First-Year Seminar. (1–3)
selected semesters

CET 200 Object-Oriented Software Development II. (3)
fall and spring
Object modeling with class and interaction diagrams; inheritance and run-time binding; introduces frameworks with Java collections and windowing. Prerequisite: CET 100.

CET 230 Applied Data Structures. (3)
fall
Introduces data structures: strings, stacks, queues, binary trees, recursion, searching, and sorting. Prerequisite: CET 200.

CET 256 C Programming for Engineering Technology. (3)
fall, spring, summer
Applied and practical problem solving using the C programming language. Prerequisite: ETC 100.

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

CET 326 Programming Languages for Technology with C/C++ and Visual BASIC. (4)
fall and spring
Programming language design and implementation concepts through programming C/C++, Visual BASIC; execution, run-time management, data control, pointers, templates, multiple inheritance. Lecture, lab. Prerequisites: CET 150, 200.

CET 350 Digital Systems II. (4)
fall
Analysis and design of synchronous and asynchronous state machines. Introduces VHDL. Lecture, lab. Prerequisite: CET 150.

CET 354 Microcomputer Architecture and Programming. (4)
fall and spring
Microcomputer architecture, assembly language programming, I/O considerations, exception and interrupt handling. Introduces interfacing. Prerequisite: CET 150.

CET 364 Computer Architecture. (3)
fall
Processor performance, RISC/CISC, processor design and implementation, basic pipelining, memory hierarchy, I/O. Prerequisite: CET 200, 354.

CET 383 Shell and Script Programming with UNIX. (3)
fall and spring
UNIX operating system programming of shells, environment and 4th-generation languages and tools, such as sed, awk, perl, grep, make. Prerequisite: CET 100 or 256.

CET 386 Operating Systems Principles. (3)
spring
Fundamentals of operating systems, process management, scheduling and synchronization techniques, memory and file management, protection and security issues. Prerequisite: CET 256.

CET 400 Software Engineering Technology. (3)
spring
Software life-cycle models; project management; team development environments; software specification, design, implementation techniques and tools, validation, and maintenance; user documentation. Prerequisite: CET 326.

CET 401 Digital Signal Processing for Multimedia. (3)
fall
Applies DSP techniques to multimedia. Digital filter analysis and design. Time and frequency techniques. Computer applications. Cross-listed as EET 401. Credit is allowed for only CET 401 or EET 401. Prerequisites: EET 301; MAT 262.

CET 415 Applied Software Process. (3)
fall and spring
Applies software processes using Rational's Unified Process (RUP) and eXtreme Programming (XP), iterative and architecture-centric development. Credit is allowed for only CET 415 or 515. Prerequisite: CET 400.

CET 420 Foundations of Distributed Web-Based Applications in Java. (3)
fall and spring
Principles underlying design and implementation of distributed software components; sockets, protocols, threads, XML, serialization, reflection, security, and events. Prerequisites: CET 230, 386.

CET 425 Server Software Programming. (3)
once a year
Design and implementation of software servers, threaded socket servers, servers for distributed Web-based applications; security for the Web. Prerequisite: CET 420 or instructor approval.

CET 427 Distributed Objects with Java and CORBA. (3)
spring
Managing network objects with RMI and CORBA; frameworks for naming, discovering, and invocation, such as JNDI, JINI, and JavaSpaces. Prerequisite: CET 420 or instructor approval.

CET 428 Web-Client User Interface Programming. (3)
fall
Client-server model for window interfaces. Java Swing, Applets, markup and scripting languages; Web tools and related technologies. Prerequisite: CET 420 or instructor approval.

CET 433 Database Technology. (3)
fall
Introduces database technologies and DBMS, data models, and languages. Prerequisites: CET 230, 326.

CET 441 Software for Personal Digital Assistants. (3)
fall
Mobile computing using Java's K, Virtual Machine, MIDP for wireless applications; user interfaces, persistent data storage, and networking. Prerequisite: CET 420.

CET 452 Digital Logic Applications. (4)
spring
Design of sequential machines using system design techniques and complex MSI/LSI devices with lab. Prerequisite: CET 350.

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 85.

CET 456 Assembly Language Applications. (3)
fall
Programming using BIOS and DOS routines. High-level language interfacing. Disk operations, TSR routines, and device drivers. Prerequisite: CET 354.

CET 457 Microcomputer Systems Interfacing. (4)
spring
Applications of microcomputer hardware and software. Special purpose controllers, interface design. Lecture, lab. Prerequisites: CET 354; EET 310.

CET 458 Digital Computer Networks. (3)
spring
Network hardware and software, topologies, protocols, OSI model, LANs, WANs Internet; basic concepts of packet switching, routing, error controlling. Prerequisites: CET 354; EET 372.

CET 459 Internet Networking Protocols. (3)
fall
Computer networking for application, transmission control and network layers using the Internet protocols as a model; reliability and security. Prerequisites: CET 200 (or 256), 354.

CET 473 Digital/Data Communications. (4)
fall
Signals, distortion, noise, and error detection/correction. Transmission and systems design. Interface techniques and standards. Lecture, lab. Prerequisites: CET 354; EET 372.

CET 484 Internship. (1–3)
selected semesters

CET 486 Hardware Description Languages: VHDL. (3)
spring
Introduces hardware description languages using VHDL. Techniques for modeling and simulating small digital systems using a VHDL simulator. Prerequisites: CET 350, 383.

CET 488 Systems Administration of UNIX. (3)
fall
Administration of UNIX, its processes, system calls, kernel, file structure, and interprocess communication using command line tools. Lecture, lab. Prerequisites: CET 383, 386.

CET 489 Network Administration with TCP/IP. (3)
spring
Writing C programs and shell scripts to create, control, and administer computer networks. Installation and maintenance of computer networks. Prerequisites: CET 383, 459.

CET 490 Reading and Conference. (1–12)
selected semesters

CET 492 Honors Directed Study. (1–3)
selected semesters

CET 493 Honors Thesis. (1–6)
selected semesters

CET 494 Special Topics. (1–4)
selected semesters
Topics may include the following:
- Computer Project

CET 498 Pro-Seminar. (1–3)
selected semesters

CET 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 56.

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 56.

ELECTRONICS ENGINEERING TECHNOLOGY (EET)

EET 191 First-Year Seminar. (1–3)
selected semesters

EET 208 Electric Circuit Analysis I. (4)
fall and spring
Electrical models, AC/DC steady-state analysis of first and second order systems. Circuit theorems. Three-phase circuits. Lecture, lab. Pre- or corequisite: MAT 261.

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

EET 301 Electric Circuit Analysis II. (4)
fall and spring
Analysis of continuous-time signals and linear systems of using Laplace and Fourier response of circuits. Lecture, lab. Prerequisite: EET 208. Pre- or corequisite: MAT 262.

EET 304 Transmission Lines in Computer Networks. (3)
spring
Theory and application of transmission lines in high-speed computer networks. Signal propagation and impedance matching. Lecture, lab, computer labs. Prerequisite: EET 301.

EET 310 Electronic Circuits I. (4)
fall and spring
Multistage amplifier, analysis, and design using models and computer simulation. Lecture, lab. Prerequisite: EET 208.

EET 372 Communication Systems. (4)
fall and spring
Systems analysis and design of AM, FM, PCM, and SSB communication systems. Noise and distortion performance of communication systems. Lecture, lab. Pre- or corequisites: EET 301, 310.

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

EET 396 Professional Orientation. (1)
fall and spring
Technical, professional, economic, and ethical aspects of electronics/computer engineering technology practice and industrial organization. Lecture, projects. Prerequisite: junior standing.

EET 401 Digital Signal Processing for Multimedia. (3)
fall
Applies DSP techniques to multimedia. Digital filter analysis and design. Time and frequency techniques. Computer applications. Cross-listed as CET 401. Credit is allowed for only CET 401 or EET 401. Prerequisites: EET 301; MAT 262.

EET 403 PLCs, Sensors, and Actuators. (3)
spring
Applications, programming, and troubleshooting using PLCs. Interfacing to motors, sensors, and actuators. Fluid power principles. Lecture, lab, projects. Prerequisite: EET 208 (or equivalent electrical science course).

EET 406 Control System Technology. (4)
spring
Control system components, analysis of feedback control systems, stability, performance, and application. Lecture, lab, computer simulations. Prerequisites: EET 301; MAT 262.

EET 407 Energy Conversion and Applications. (4)
fall
Electricity, magnetism, mechanics, heat and units, and three-phase circuits. Electrical machines, transformers, generation, transmission, and distribution of electrical energy. Lecture, lab. Prerequisite: EET 208.

EET 410 Electronic Circuits II. (4)
fall and spring
Analysis and design of OP-amps, power amplifiers, and digital logic families. Feedback design using frequency response. Computer analysis and design. Lecture, lab. Prerequisites: EET 301, 310.

EET 422 Electronic Switching Circuits. (4)
once a year
Analysis and design of electronic circuits operating in a switching mode. Waveshaping, timing, and logic. Computer simulation. Lecture, lab. Prerequisites: CET 350; EET 301, 310.

EET 430 Instrumentation Systems. (4)
fall
Measurement principles and instrumentation, techniques. Signal and error analysis. Lecture, lab. Prerequisites: EET 301, 310.

EET 460 Power Electronics. (4)
spring
Analyzes circuits for control and conversion of electrical power and energy. Lecture, lab. Prerequisites: EET 301, 310, 407.

EET 470 Communication Circuits. (4)
spring
Analysis and design of passive and active communication circuits. Coupling networks, filters, and impedance matching. Modulation and demodulation techniques. Computer solutions. Lecture, lab. Prerequisites: EET 372; MAT 262.

EET 482 Industrial Practice: Internship/Co-op. (1–4)
fall, spring, summer
Specially assigned or approved activities in electronic industries or institutions. Requires report. May be repeated for up to a maximum of 10 credits. Prerequisites: Electronics Engineering Technology major; junior or senior standing.

EET 484 Internship. (1–3)
selected semesters

EET 490 Electronics Project. (1–4)
fall, spring, summer
Individual or small group projects in applied electronics, with emphasis on laboratory practice or hardware solutions to practical problems. Prerequisite: instructor approval.

EET 492 Honors Directed Study. (1–3)
selected semesters

EET 493 Honors Thesis. (1–6)
selected semesters

EET 494 Special Topics. (1–4)
fall and spring
Topics may include the following:
- Data Analysis. (3)

EET 498 Pro-Seminar. (1–3)
selected semesters

EET 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 56.

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 56.

MICROELECTRONICS ENGINEERING TECHNOLOGY (UET)

UET 191 First-Year Seminar. (1–3)
selected semesters

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

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

UET 305 Introduction to Microelectronics. (3)
fall, spring, summer
Quantifies the role of microelectronics technology and its associated skills as drivers for electronics systems development. Lecture with strong Web preparation and support. Prerequisite: junior standing.

UET 331 Electronic Materials. (3)
fall
Physical, chemical, electromagnetic, and mechanical properties of electronic materials. Solid-state device characteristics and their material properties. Prerequisites: CHM 113; EET 208; PHY 112, 114.

UET 411 Layer Deposition Technology. (3)
spring
Fundamentals, applications, and vacuum technology of layer deposition processes used in IC fabrication. Lecture with Web support. Prerequisite: UET 331. Corequisite: UET 417.

UET 415 Electronic Manufacturing Engineering Principles. (3)
fall and spring
Electronic equipment design and fabrication principles and practice. Completion of electronics hardware design project and report. Lecture, lab. Fee. Prerequisite: senior standing (113 hours) in Electronics Engineering Technology.

UET 416 Dopant Control Technology. (3)
fall
Design and practical realization of charge distribution in microelectronic devices including ion implantation and diffusion processes. Lecture with Web support. Prerequisite: UET 331. Corequisite: UET 417.

UET 417 Monolithic Integrated Circuit Laboratory. (2)
fall
Laboratory practice in the fabrication of integrated circuits. Lab. Prerequisite: UET 331. Corequisite: UET 416.

UET 418 Systems on Silicon. (4)
spring
Factors that drive integration on silicon, including logic, memory, and interfaces. Economics of system-level solutions. Lecture with Web support, lab, practical project. Prerequisite: UET 331.

UET 421 IC Device Characterization. (3)
fall
Design and operation of the major classes of semiconductor devices. Characterization by parameters and their extraction. Future technology trends. Lecture with Web support. Prerequisite: UET 331.

UET 424 Pattern Transfer Technology. (3)
spring
Maskmaking, lithography, and etch processes for integrated circuit fabrication. Lecture with Web support. Prerequisite: UET 331. Corequisite: UET 417.

UET 426 Software Tools for the Semiconductor Industry. (3)
spring
Introduces software tools commonly used in the semiconductor industry, such as SUPREM IV, PSPICE, VIEWLOGIC, and ICED. Prerequisite: UET 331.

UET 432 Semiconductor Packaging and Heat Transfer. (3)
spring
Packaging theory and techniques; hermetic and plastic assembly; thermal management; electrical characteristics and reliability. Prerequisites: ETC 340 and UET 331 (or their equivalents).

UET 437 Process Control and Validation. (3)
spring
Statistical process control and its application to IC fabrication. Design, control, and performance validation techniques throughout the manufacturing process. Lecture with Web support. Prerequisite: 300-level statistics course. Corequisite: UET 417.

UET 484 Internship. (1–3)
selected semesters

UET 485 Digital Testing Techniques. (3)
once a year
Hardware/software aspects of digital testing technology; systems, board, and logic testing and equipment. Lecture, lab. Prerequisites: CET 350; EET 310.

UET 492 Honors Directed Study. (1–3)
selected semesters

UET 493 Honors Thesis. (1–6)
selected semesters

UET 494 Special Topics. (1–4)
selected semesters

UET 498 Pro-Seminar. (1–3)
selected semesters

UET 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 56.

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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 85.

Department of Information and Management Technology

www.east.asu.edu/ctas/imt
480/727-1781
TECH 102

Thomas E. Schildgen, Chair

Professors: Duff, Hild, Sadowski, Schildgen

Associate Professors: Grossman, Hirata, Humble, Matson, Olson, Peterson

Assistant Professor: Kime

Senior Lecturer: Wilson

Lecturers: Dolin, Harris, Lestar

PURPOSE

The mission of the department is to prepare graduates who are able to develop and communicate technological solutions to industrial problems, to manage systems operations, to improve and evaluate products, to provide customer support, and to facilitate technology transfer in industry and government. Increased complexity and sophistication have created great demand for those individuals who possess a working knowledge of the technical phases of planning, testing, production, and fabrication of consumer and industrial products and equipment. Technology includes the application of science, systematic methods, procedures, machines, communication protocols, and materials control for the development, improvement, and implementation of state-of-the-art solutions to industrial problems.

DEGREES

The faculty in the Department of Information and Management Technology offer the B.S. degree in Industrial Technology, with concentrations in the following areas: environmental technology management, industrial technology management, and graphic information technology.

The Bachelor of Science in Industrial Technology Degree including the environmental technology management, graphic information technology, and industrial technology management concentrations is fully accredited by the National Association of Industrial Technology (NAIT). For more information, call 734/677-0720, e-mail nait@nait.org, or write

NATIONAL ASSOCIATION OF INDUSTRIAL TECHNOLOGY
3300 WASHTENAW AVENUE SUITE 220
ANN ARBOR MI 48104-4200

For students holding an A.A.S. degree the department offers the B.A.S. degree in Applied Science, with concentrations in digital media management, digital publishing, emergency management, fire service management, operations management, municipal operations management, and technical graphics.

A Master of Science in Technology degree is offered for graduate study. The department offers four concentrations for the graduate degree: environmental technology management, fire service administration, graphic information technology, and management of technology. For more information about the graduate program, see the *Graduate Catalog*.

INDUSTRIAL TECHNOLOGY—B.S.

The curriculum consists of First-Year Composition, university General Studies, and technical courses. Note that all three General Studies awareness areas are required. Consult with an advisor for an approved list of courses. The technical part of the curriculum includes a required Information and Management core, program concentration course work, and technical electives selected with approval of an advisor.

Information and Management Technology students are required to complete a minimum of 120 semester hours with a 2.00 cumulative GPA, including a minimum of 50 semester hours of upper-division courses to graduate.

Information and Management Core*

ETC	100	Languages of Technology *CS*	4
GIT	233	Digital Publishing	3
IMC	331	Quality Assurance	3
IMC	346	Management Dynamics	3
IMC	396	Professional Orientation	1
IMC	470	Project Management	3
Total			17

* These courses are for the industrial technology management and graphic information technology concentrations.

Environmental Technology Management Concentration. The environmental technology management concentration prepares graduates to manage such challenging problems in industry as regulatory compliance, hazardous materials management, pollution prevention, and international environmental standards for manufacturing. The curriculum is designed to provide a unique blend of critical scientific, technical, and management skills; degree requirements encompass the development of a broad background in the natural sciences and mathematics, social and behavioral sciences, management theory, regulatory issues, and applied sciences. The program is purposely structured to facilitate transfer students who are searching for a degree program that builds upon a strong technical background and focuses on the environmental issues faced by industry.

Industrial Technology Management Concentration. The industrial technology management concentration prepares students for supervisory and administrative positions in industry, manufacturing, and public service organizations. Course work includes accounting, data analysis, economics, effective decision making, finance, international business, legal and ethical studies, marketing, operations management, and safety. Emphasis is placed on health and safety within the workplace.

The industrial technology management program may be articulated with a broad range of community college technical courses. Community college specializations in areas such as aeronautics, construction, electronics, fire science, police science, graphic information technology, hazardous materials and waste management, computer graphics, safety and health, human resource management, production management, and manufacturing may form a technical specialty area within the industrial technology management option. Consultation with an advisor is required to coordinate the course selection for transfer to this option.

Graphic Information Technology Concentration. The graphic information technology concentration prepares students for technical and management positions in the diverse graphic communication and information technology industries: digital printing and publishing; technical/digital media production; management of graphic information assets; quality assurance of graphic products; planning and evaluation of print, Internet, multimedia, and computer-based communications. This is an intensive 120-semester-hour graphic technology program of study emphasizing theory and hands-on laboratory practice. Students develop skills to plan and execute graphic solutions using visualization and sketching, engineering graphic standards, technical document design, higher-level graphic programming languages, computer drawing and illustration, multimedia and three-dimensional modeling, project management, quality assurance, and e-commerce practices.

The Graphic Information Technology Facility (GITF), located in the Technology Center, provides internship opportunities and exposes students to current production technology, problem-solving skills, cost analysis, and human resource issues. Graduates are able to present technical solutions using graphics in print and Internet publications, engineering documents, media-rich presentations, interactive training and instruction, models, and animations. Typical career opportunities include graphic operations management, sales and marketing, information technology support in graphics-related industries, graphic systems analysis, digital publishing (both print and online), and computer graphics content planning and creation.

CERTIFICATE PROGRAM IN HAZARDOUS MATERIALS AND WASTE MANAGEMENT

The Certificate Program in Hazardous Materials and Waste Management is designed to provide current and prospective employees of industry and government with a comprehensive and practical curriculum of study in hazardous materials management. The certificate program features instruction by ASU faculty, attorneys, and professionals who work in the specific area in which they teach. Participation in the certificate program is available in three options: a certificate program for nondegree students, a B.S.degree in Industrial Technology with a Certificate in Hazardous Materials and Waste Management, and a Master of Science in Technology degree with a Certificate in Hazardous Materials and Waste Management. Students must complete seven selected courses (five required and two electives) and earn a grade of "C" or higher to receive the certificate. Except for the introductory course, ETM 501 Principles of Hazardous Materials and Waste Management, the remainder of the courses may be taken in any sequence.

B.I.S. CONCENTRATION

A concentration in hazardous materials and waste management is available under the Bachelor of Interdisciplinary Studies (B.I.S.) 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 B.I.S. program take active roles in creating their educational plans and defining their career goals. For more information, see "Bachelor of Interdisciplinary Studies," page 116.

APPLIED SCIENCE—B.A.S.

The Bachelor of Applied Science degree is a "capstone" degree for the Associate of Applied Science degree. The B.A.S. 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 B.A.S. degree program is restricted to students holding an A.A.S. 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 for nonresident applicants.

Degree Requirements

The B.A.S. degree in the College of Technology and Applied Sciences consists of 60 semester hours of upper-division (300 level and above) courses, with 30 hours in residence.

A.A.S. degree	60
Assignable credit	6
B.A.S. core	15
General Studies	19
Technical concentration	20
Total	120

General Studies Curriculum

The B.A.S. curriculum builds on the general education content of the A.A.S. 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

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 85.

Assignable Credit

Assignable credit allows space in the curriculum for prerequisite courses needed to succeed in the program. The courses are determined by the student and the advisor.

B.A.S. Core

The area core focuses on management and organization, professional communication, quantitative analysis, and computer competency.

GIT	335	Computer Systems Technology	3
IMC	346	Management Dynamics	3
ITM	452	Industrial Human Resource Management or IMC 470 Project Management (3)	3
MET	401	Quality Assurance or STP 420 Introductory Applied Statistics *CS* (3)	3
TWC	400	Technical Communications *L*	3
Total			15

Technical Concentrations

Operations Management Technology. The purpose of this technical concentration is to prepare supervisors for management functions in industry, manufacturing, and public service organizations. The B.A.S. degree provides the management and supervision content required for industry and governmental agencies.

Digital Media Management. This concentration prepares graduates for technical positions in industries implementing, planning, and producing interactive communications, integrated media, and multimedia for design, training, and marketing. Prospective students with A.A.S. degrees in areas such as multimedia, printing and publishing, commercial graphics, desktop publishing, or computer illustration may be interested in pursuing a digital media management concentration.

Technical Graphics. This concentration prepares graduates for positions in industries implementing technical and engineering graphics in computer-aided design and computer integrated manufacturing. A.A.S. degrees in drafting and design, computer-aided design, computer integrated manufacturing technology, mechanical technology, architectural technology, or construction technology may provide an excellent foundation for a technical graphics concentration.

Digital Publishing. This concentration prepares graduates for lead technical and entry-level management positions in the printing and publishing industry. A.A.S. degrees in multimedia, printing and publishing, commercial art, desktop publishing, or computer illustration may find that this technical concentration provides excellent opportunities.

Emergency Management. The concentration prepares graduates for positions in industry, municipal departments, and government agencies. The curriculum addresses the established Federal Emergency Management Administration (FEMA) guidelines, on-site emergency response contingency planning, first responder scene management, logistical analysis, and communications protocol.

Fire Service Management. This concentration prepares graduates for positions in industry, municipal departments, and governmental agencies. The curriculum addresses services delivered by fire departments, fire service personnel development, zoning, planning, inspections, and arson investigations.

Municipal Operations Management. This concentration prepares students for supervisory and management functions within municipalities, public service organizations, or businesses that provide services to the public sector. The curriculum addresses quality assurance, ethical issues, leadership practices, operations management, project management, marketing, finance, public sector management, and organizational effectiveness.

GRAPHIC INFORMATION TECHNOLOGY (GIT)

GIT 135 Graphic Communications. (3)
fall and spring
Introduces the technologies involved in the design, image generation, transmission, and industrial production of multiple images for consumer utilization. Lecture, lab, field trips.

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

GIT 210 Creative Thinking and Design Visualization. (3)
fall and spring
Fundamental methods, concepts, and techniques of creative thinking, design visualization, and problem solving. Also includes communication, cultural, and societal influences. Lecture, lab. Prerequisite: ETC 100.

GIT 212 Computer-Aided Design and Drafting (CADD). (3)
fall and spring
CADD for product design, representation, and documentation; includes projection theory, descriptive geometry, graphics analysis, drafting standards, and precision dimensioning techniques. Lecture, lab. Prerequisite: ETC 100 (or its equivalent).
General Studies: CS

GIT 215 Introduction to Graphics Programming. (3)
fall
Introduces analyzing, planning, and executing graphic programs using industry-standard programming tools. Lecture, lab. Prerequisite: ETC 100 (or its equivalent).

GIT 230 Digital Illustration in Publishing. (3)
fall and spring
Raster and vector illustration in publishing. Lecture, lab. Pre- or corequisite: GIT 135.

GIT 233 Digital Publishing. (3)
fall and spring
Introduces software and hardware used for digital publishing and infographics. Lecture, lab. Pre- or corequisites: GIT 135, 210.

GIT 237 Web Content Design. (3)
spring
Introduces design principles for visual content on the World Wide Web; raster, vector, fonts, portable documents, color palettes, file formats. Lecture, lab. Prerequisite: GIT 135 (or its equivalent). Pre- or corequisite: GIT 233.

GIT 312 3D Computer Graphics Modeling and Representation. (3)
fall
3D solid modeling applications: concepts, techniques, data structures, modeling strategies, assemblies, geometric representation. Lecture, lab. Prerequisite: GIT 212.
General Studies: CS

GIT 313 Technical Illustration and Photorealistic Rendering. (3)
fall
Computer-generated graphics for technical illustration and design presentation: axonometric and perspective drawing; shading, shadowing, materials and textures; photorealistic rendering for PostScript output. Lecture, lab. Prerequisite: GIT 212.

GIT 314 Multimedia Design, Planning, and Storyboards. (3)
spring
Creative and conceptual process of content selection, planning, designing, flowcharting, storyboarding, proposing, configuring, proto-

typing, and presenting multimedia projects. Lecture, lab. Prerequisite: GIT 237.

GIT 333 Printing Technology. (3)
spring
Theory and application of sheet and web press technology for offset-lithography, flexography, screen process, and digital printing. Lecture, lab. Pre- or corequisite: GIT 135.

GIT 334 Image Capture and Manipulation. (3)
fall
Theory and application of image capture techniques used for all copy formats and conversion processes required for reproduction or dissemination. Lecture, lab. Prerequisite: GIT 233.

GIT 335 Computer Systems Technology. (3)
selected semesters
Survey of computer-based technology covering hardware, software, storage, networking, internet, telecommunications, and information systems. Lecture, lab. Prerequisite: junior standing.

GIT 337 Web Content Design. (3)
fall and spring
Introduces design principles for visual content on the World Wide Web; raster, vector, fonts, portable documents, color palettes, file formats. Lecture, lab. Pre- or corequisite: GIT 233.

GIT 352 Technical Presentations. (3)
spring
Technologies for planning, creating, and delivering individual and group presentations. Prerequisites: ENG 102; GIT 233.

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

GIT 411 Computer Animation. (3)
fall and spring
2D and 3D computer animation methods: project planning, scripting, storyboards, advanced modeling, lighting, materials mapping, and motion. Lecture, lab. Prerequisites: GIT 312, 334.

GIT 412 Multimedia Authoring, Scripting, and Production. (3)
fall and spring
Production of multimedia projects using industry-standard authoring applications: project management, client considerations, and project documentation; user interface design, interactivity, media, and databases. Lecture, lab. Prerequisite: GIT 314.

GIT 413 Professional Portfolio Design and Presentation. (3)
spring
Digital media portfolio design and production: planning, audience analysis, media selection, authoring, media formats, production, copyright considerations, marketing, and delivery. Lecture, lab. Prerequisites: GIT 314, 334.

GIT 414 Web Site Design and Internet/Web Technologies. (3)
spring
Web site design, authoring, standards, protocols, tools, and development techniques for commercial client-sided Web-based graphic information systems. Lecture, lab. Prerequisites: GIT 334, 337.

GIT 415 Computer Graphics: Business Planning and Management. (3)
spring
Implementation planning: feasibility and application studies; needs assessment and operational analysis techniques; organization, managerial, and technology considerations; business plan development. Lecture, lab, field trips. Prerequisite: senior standing in Information Technology (graphic information technology concentration).

GIT 417 Advanced Internet Programming. (3)
fall
Uses industry-standard programming languages and techniques to create interactive graphic information Web sites and applications. Lecture, lab. Prerequisite: GIT 414.

GIT 432 Graphic Industry Business Practices. (3)
selected semesters
Business practices related to press/prepress/Web industries; trade customs, cost analysis, marketing and management approaches. Lecture, lab, field trips. Prerequisite: GIT 414.

GIT 435 Web Management and E-commerce. (3)
spring
Internet Web site management, security, online databases, and new e-commerce business models. Lecture, lab. Prerequisite: GIT 414.

GIT 436 Gravure Technology. (3)
spring
In-depth study of the market profile and production sequences related to the gravure method of printing. Prerequisite: GIT 135.

GIT 437 Color Reproduction Systems. (3)
fall
Scientific analysis for the engineering of color reproduction systems and color models used in the graphics industry. Prerequisite: GIT 334.

GIT 441 Graphic Information Systems. (3)
selected semesters
Graphic information systems common to the workplace: graphic user interfaces for online databases, geographic, industrial, architectural, and management applications. Lecture, lab. Prerequisite: senior standing in Information Technology (graphic information technology concentration).

GIT 450 Digital Workflow in Graphic Industries. (3)
fall
Analyzes digital production systems for input, assembly, and output of graphic information to print and Web, including networking and job tracking. Lecture, lab. Prerequisite: GIT 334.

GIT 494 Special Topics. (1–4)
fall and spring
Topics may include the following:
- Computer Systems Applications. (3)

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

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 56.

ENVIRONMENTAL TECHNOLOGY MANAGEMENT (ETM)

ETM 301 Environmental Management. (3)
fall
Focuses on knowledge and skills necessary to manage environmental programs. Perspectives include regulatory, individual, corporate, and consulting. Pre- or corequisites: CHM 113; MAT 170.

ETM 302 Water and Wastewater Treatment Technology. (3)
selected semesters
Explores the development of treatment technologies. Addresses regulatory standards. Emphasizes theory and practice of system design, laboratory analysis standards and procedures. Prerequisites: CHM 113; MAT 170. Pre- or corequisite: ETM 301.

ETM 303 Environmental Regulations. (3)
fall and spring
Explores environmental laws, regulations, and directives. Addresses air, land, and water. Prerequisite: ETM 301.

ETM 360 Introduction to Emergency Management. (3)
fall
Emergency management theories. Comprehensive emergency management. Mitigation, preparedness, response, and recovery. Post-disasters and policy formation. Current FEMA all-hazards approach.

ETM 362 Managing Natural and Technological Disasters. (3)
spring
Federal, state, and local responses to emergencies. Management of mass casualties, evacuation, sheltering, and terrorism; declaration of emergency procedures.

ETM 363 Computer Applications in Emergency Management. (3)
spring
Explores specific computer programs which are currently in use for contingency planning, tracking chemical inventories, and response resources. Cross-listed as FSM 363. Credit is allowed for only ETM 363 or FSM 363.

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 85.

ETM 364 Toxicology and Biohazards in Emergency Management. (3)
fall
Introduces poisons. Dose response routes of exposure and toxicokinetics. Diseases associated with natural disasters. Clinical presentation of treatments.

ETM 401 Hazardous Waste Management. (3)
fall and spring
Definition of hazardous waste, RCRA classification, and OSHA criteria. Overview of requirements and methods of waste management. Prerequisite: ETM 301.

ETM 402 Unit Treatment Technologies. (3)
spring
Addresses various treatment technologies for contaminated air, water, and soil. Emphasizes design based upon medium, type of contamination, and concentration. Prerequisite: ETM 302.

ETM 406 Environmental Chemistry. (3)
fall and spring
Examines reactions, transport, and fates of hazardous chemicals in water, soil, air, and living organisms. Prerequisites: both CHM 113 and 115 or only CHM 114; MAT 170.

ETM 407 Occupational Hygiene. (3)
spring
Overview of occupational health hazards, including recognition, evaluation, and control. Includes regulatory status and health standards. Prerequisites: CHM 101 (or 113 or 114); MAT 170.

ETM 424 Comprehensive Emergency Management. (3)
summer
Addresses theory and management techniques for emergency preparedness, including mitigation, preparedness, response, and recovery. Pre- or corequisite: ETM 301.

ETM 426 Environmental Issues. (3)
spring
Explores the science and policy implications of contemporary problems that threaten the environment. Pre- or corequisites: CHM 113; MAT 170.

ETM 428 International Environmental Management. (3)
summer
Emphasizes technological and economic pressures experienced by developing countries. Prerequisite: ETM 301.
General Studies: G

ETM 460 Incident Management Systems and Emergency Operations Center. (3)
fall
Covers IMS, terminology, players, and management philosophy. EOC setup, activation, operation, and termination. EOC funding and politics. Cross-listed as FSM 460. Credit is allowed for only ETM 460 or FSM 460.

ETM 461 Contingency Planning. (3)
selected semesters
Provides understanding of techniques for in-house or on-site planning as well as community planning.

ETM 468 Simulation and Exercising. (3)
selected semesters
Requirements, planning, conduct, and critique of exercises related to emergency planning. Emphasizes realism using moulage and props.

ETM 494 Special Topics. (1–4)
spring
Topics may include the following:
- Bioremediation. (3)
  Technical-regulatory and policy issues emanating from minetailing and animal waste. Lecture, case studies.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

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 56.

FIRE SERVICE ADMINISTRATION (FSA)

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 56.

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 56.

FIRE SERVICE MANAGEMENT (FSM)

FSM 304 Fire Personnel Management. (3)
fall
Promotion, personnel development, career and incentive systems, validation of physical requirements, managerial and supervisory procedures.

FSM 305 Quality Emergency Services. (3)
selected semesters
Covers quality issues relating to services delivered by progressive fire departments. Covers management of personnel and resources during organizational change.

FSM 306 Fire Prevention Organization and Management. (3)
selected semesters
Examines and evaluates the techniques, procedures, programs, and agencies involved in preventing fires.

FSM 363 Computer Applications in Emergency Management. (3)
spring
Explores specific computer programs which are currently in use for contingency planning, tracking chemical inventories, and response resources. Cross-listed as ETM 363. Credit is allowed for only ETM 363 or FSM 363.

FSM 400 Human Behavior and the Fire Threat. (3)
selected semesters
Proper ways of conducting post-fire interviews; emphasizes the psychological effects of communications during emergencies.

FSM 421 Political and Legal Consideration in Fire Science. (3)
spring
Study of legal and political considerations that affect the decision making of fire service managers.

FSM 425 Fire Service Administration. (3)
fall
Presents modern management and planning techniques that apply to organizing a fire department.

FSM 460 Incident Management Systems and Emergency Operations Center. (3)
fall
Covers IMS, terminology, players, and management philosophy. EOC setup, activation, operation, and termination. EOC funding and politics. Cross-listed as ETM 460. Credit is allowed for only ETM 460 or FSM 460.

FSM 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 56.

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 56.

INFORMATION AND MANAGEMENT CORE (IMC)

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

IMC 331 Quality Assurance. (3)
spring
Instrumentation and methodologies for materials testing and quality control in various manufacturing processes. Lecture, field trips.

IMC 346 Management Dynamics. (3)
fall and spring
Management challenges and the leadership skills needed to achieve organizational objectives in the changing industrial and technical environments. Prerequisite: junior standing.

IMC 396 Professional Orientation. (1)
fall and spring
Senior advisement, industry presentations, and career counseling.

IMC 470 Project Management. (3)
spring
Introduces techniques for managing small groups within larger organizations, including team building, motivating, planning, tracking activities, and computer tools. Prerequisites: ECN 111; IMC 346; ITM 344.

IMC 498 Pro-Seminar. (1–7)
selected semesters

IMC 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 56.

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 56.

INDUSTRIAL TECHNOLOGY MANAGEMENT (ITM)

ITM 343 Occupational Safety and Ergonomics. (3)
fall
Health and safety movement, accident theories and effects, OSHA standards and liability, safeguarding, hazards, workers' compensation, ergonomics, and safety. Prerequisite: junior standing.

ITM 344 Industrial Organization. (3)
spring
Industrial organization concepts. Topics relate to industrial relations, governmental regulations, organizational structure, labor relations, human factors, and current industrial practices. Prerequisite: IMC 346.

ITM 345 Public Sector Management. (3)
fall and spring
Management in government and public agencies. Includes mission, planning and organizing to provide services, human resource issues, conflict resolution, coordination. Prerequisite: junior standing.

ITM 402 Legal Issues for Technologists. (3)
fall
American legal system and impact on technology management issues: contracts, torts, intellectual property, white collar crime, antitrust, environmental, and employment.

ITM 405 Forecasting and Evolution of Technology. (3)
selected semesters
History and evolutionary nature of selected technologies, issues in the management of emerging technologies, and methods of technological forecasting. Prerequisite: IMC 346 (or its equivalent).

ITM 430 Ethical Issues in Technology. (3)
spring
Topics in social responsibility for industrial technology and engineering. Prerequisite: IMC 346.

ITM 440 Introduction to International Business. (3)
spring
International business principles and operations, including partnerships, trade agreements, currency issues, international sales, and cultural differences between countries. Prerequisite: IMC 346.
General Studies: G

ITM 445 Industrial Internship. (1–10)
fall, spring, summer
Work experience assignment in industry commensurate with student's program. Specialized instruction by industry with university supervision. Pass/fail. Prerequisites: advisor approval; junior standing; 2.50 GPA.

ITM 451 Industrial Distribution and Materials Management. (3)
selected semesters
Surveys topics in industrial distribution including, but not limited to, materials handling, purchasing, receiving, warehousing, traffic, inventory control, and shipping. Prerequisite: IMC 346 or ITM 343.

ITM 452 Industrial Human Resource Management. (3)
fall
Concepts and practices of human resource management in a global industrial environment. Prerequisite: IMC 346.

ITM 453 Safety Management. (3)
selected semesters
Development and management of safety programs, education and training, and relationships within an organization. Prerequisite: ITM 343 or instructor approval.

ITM 455 Industrial Marketing Concepts. (3)
selected semesters
Customer and sales strategies for industrial organizations, including current practice and future planning. Prerequisites: ECN 111; IMC 346; junior standing.

ITM 456 Introduction to Organized Labor. (3)
spring
Introduces labor relations, unions, federations, collective bargaining, grievances, and labor legislation. Prerequisites: IMC 346; ITM 344.

ITM 461 Operations Management. (3)
fall
Introduces supervisory principles as applied to production of goods and services. Prerequisites: IMC 346; ITM 344.

ITM 480 Organizational Effectiveness. (3)
spring
Human aspects of supervisory behavior in the industrial setting and how they influence efficiency, morale, and organizational practices. Prerequisite: IMC 346.

ITM 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 56.

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 56.

Department of Mechanical and Manufacturing Engineering Technology

www.east.asu.edu/ctas/mmet
480/727-1584
SIM 295

Scott G. Danielson, Chair

Professor: Collins

Associate Professors: Biekert, Danielson, Nam, Palmgren, Rajadas, Rogers

Assistant Professor: Post

PURPOSE

The Department of Mechanical and Manufacturing Engineering Technology emphasizes applied engineering practice through four-year degree programs in Manufacturing Engineering Technology and Mechanical Engineering Technology. Math and science principles are applied to the solution of technical problems in a lecture/laboratory environment.

Major emphasis is placed on reducing the amount of time required by industry to make the graduate productive in any area of work. The goal of the Manufacturing Engineering Technology program is to prepare students for employment in areas such as manufacturing engineering, manufacturing processes, automation, and quality control. The department actively supports the student chapter of the Society of Manufacturing Engineers.

The mechanical engineering technology program produces graduates with the ability to design, develop, implement, and improve machinery, workstations, and systems. The curriculum prepares graduates for many job opportunities in engineering design, manufacturing, and laboratory environments. Graduates are prepared to design and develop machines and related mechanical equipment. Aircraft and their components, automation as used in manufacturing, machine tools, materials handling systems, and industrial production equipment are just a few examples.

For more information about both programs, access the Web site at www.east.asu.edu/ctas/mmet.

ACCREDITATION

The B.S. degree in Manufacturing Engineering Technology and the B.S. degree in Aeronautical Engineering Technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (See "Accreditation," page 623, for more information.)

DEGREES

The Department of Mechanical and Manufacturing Engineering Technology offers the B.S. degree in Manufacturing Engineering Technology and the B.S. degree in Mechanical Engineering Technology.

For students holding an A.A.S. degree, the department offers the B.A.S. degree with a concentration in manufacturing technology and management.

A Master of Science in Technology degree with concentrations in manufacturing engineering technology, mechanical engineering technology, and aeronautical engineering technology is offered for graduate study. See the *Graduate Catalog* for more information.

B.S. Degree Requirements

All degree requirements for programs are shown on curriculum check sheets. Requirements include First-Year Composition, University General Studies (see "General Studies," page 85), and the Engineering Technology Core. Note that all three General Studies awareness areas are required. Consult an advisor for an approved list of courses. To graduate, students are required to complete a minimum of 128 semester hours with a 2.00 cumulative GPA, including at least 50 semester hours of upper-division courses.

Manufacturing Engineering Technology—B.S.

The B.S. degree in Manufacturing Engineering Technology requires 128 semester hours as specified below:

Engineering technology core	14
First-Year Composition	6
General Studies/department requirements	45
Manufacturing Engineering Technology major	51
Selected concentration	12
Total	128

The following courses constitute the Manufacturing Engineering Technology major and are required of all manufacturing engineering technology students. Refer to the specific concentrations for additional requirements.

Manufacturing Engineering Technology Major

EET	406 Control System Technology	4
MET	231 Manufacturing Processes	3
MET	300 Applied Material Science	3
MET	302 Welding Survey	3
MET	313 Applied Mechanics of Materials	3
MET	314 Applied Mechanics of Materials Laboratory	1
MET	331 Machine Design I	3
MET	341 Manufacturing Analysis	3
MET	344 Casting and Forming Processes	3
MET	345 Advanced Manufacturing Processes	3
MET	396 Manufacturing Professional Orientation	1
MET	401 Quality Assurance	3
MET	416 Applied Computer-Integrated Manufacturing *CS*	3
MET	443 CNC Computer Programming	3
MET	444 Production Tooling	3
MET	451 Introduction to Automation	3
MET	460 Manufacturing Capstone Project I	3
MET	461 Manufacturing Capstone Project II	3
Total		51

A student participating in the Manufacturing Engineering Technology program may select from two concentrations:

manufacturing engineering technology or mechanical engineering technology.

Manufacturing Engineering Technology Concentration. This concentration is designed to prepare technologists with both conceptual and practical applications of processes, materials, and products related to manufacturing industries. Accordingly, this concentration provides additional preparation for students to meet the responsibilities in planning the processes of production, developing the tools and machines, and integrating facilities for production or manufacturing.

Required Courses

MET 409 Applied Engineering Economics	3
MET 442 Specialized Production Processes	3
Technical electives	6
Total	12

Mechanical Engineering Technology Concentration. The primary objective of the mechanical engineering technology concentration is to offer manufacturing students an emphasis in mechanics and thermal sciences. Required courses are as follows:

AET 415 Gas Dynamics and Propulsion	3
MET 434 Applied Fluid Mechanics	3
MET 438 Machine Design II	3
Approved technical elective	3
Total	12

Mechanical Engineering Technology—B.S.

The B.S. degree in Mechanical Engineering Technology requires 128 semester hours as specified below:

Mechanical Engineering Technology major	63
Engineering technology core	14
First-year composition	6
General Studies/department requirements	45
Total	128

Students interested in the B.S. degree in Mechanical Engineering Technology choose one of the following three concentrations: mechanical, aeronautical, or automation engineering technology. Each concentration includes five courses for a total of 15 semester hours.

The mechanical engineering technology concentration builds a strong "base" of knowledge of the field and is available to students who do not desire a focused specialty area.

The aeronautical engineering technology concentration provides a specialty content area in aircraft airframe, propulsion, and aircraft production and operations. It prepares students for employment in areas such as aircraft design and manufacturing, aerodynamics, propulsion, and wind tunnel testing. However, aeronautical concentration graduates have a good general background in mechanical engineering technology and are not limited to employment opportunities in the aviation industry.

The automation engineering technology concentration provides specialty content in mechanical automation. Automated assembly and testing are major components of most modern, high volume mechanical systems and manufacturing operations. As a specialty area, this concentration provides students with an opportunity to develop knowledge and skill in the broad area of automation. It also dovetails well with the semiconductor industry where most process tools are highly automated.

The following courses constitute the Mechanical Engineering Technology major and are required of all Mechanical Engineering Technology students.

Mechanical Engineering Technology Major

AET 210 Measurements and Testing	3
AET 312 Applied Engineering Mechanics: Dynamics	3
MET 150 Introduction to Engineering Technology	1
MET 230 Introduction to Engineering Materials	2
MET 231 Manufacturing Processes	3
MET 300 Applied Material Science	3
MET 309 Nondestructive Testing and Quality Assurance	1
MET 313 Applied Mechanics of Materials	3
MET 314 Applied Mechanics of Materials Laboratory	1
MET 331 Machine Design I	3
MET 345 Advanced Manufacturing Processes	3
MET 396 Manufacturing Professional Orientation	1
MET 401 Quality Assurance	3
MET 409 Applied Engineering Economics	3
MET 418 Composite Materials Manufacturing	3
MET 432 Thermodynamics	3
MET 434 Applied Fluid Mechanics	3
MET 460 Manufacturing Capstone Project I	3
MET 461 Manufacturing Capstone Project II	3
Concentration	15
Total	63

APPLIED SCIENCE—B.A.S.

The Bachelor of Applied Science degree is a "capstone" degree for the Associate of Applied Science degree. The B.A.S. 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 B.A.S. degree program is restricted to students holding an A.A.S. degree from a regionally accredited U.S. postsecondary educational institution. A GPA of 2.00 or higher is required for resident applicants and a 2.50 for nonresident applicants.

Degree Requirements

The B.A.S. degree in the College of Technology and Applied Sciences consists of 60 semester hours of upper-division (300 level and above) courses, with 30 hours in residence. A total of 120 semester hours is required for graduation.

A.A.S. degree	60
Assignable credit	7
B.A.S. core	15
General Studies	19
Technical concentration	19
Total	120

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 85.

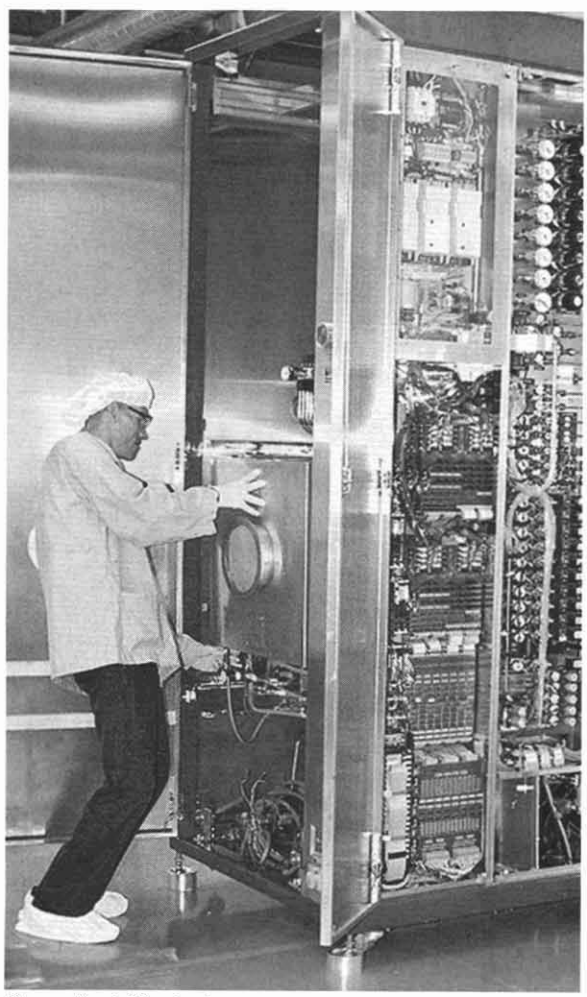
General Studies Curriculum

The B.A.S. curriculum builds on the general education content of the A.A.S. 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 allows space in the curriculum for prerequisite courses needed to succeed in the program or additional technical electives. The courses are determined by the student and the advisor.



The vertical diffusion furnace is located in the Teaching Factory within the Technology Center at ASU East.

Tim Trumble photo

B.A.S. Core

The area core focuses on management and organization, professional communication, quantitative analysis, and computer competency.

IMC 470 Project Management	3
ITM 344 Industrial Organization	3
MET 401 Quality Assurance	3
MET 416 Applied Computer-Integrated Manufacturing *CS*	3
TWC 400 Technical Communications *L*	3
Total	15

Technical Concentration

Manufacturing Technology and Management. This concentration prepares supervisors and other personnel for technical and management positions in the manufacturing industry. The students increase their knowledge of manufacturing and gain insight into other areas, such as management, that support their professional growth.

MET 300 Applied Material Science	3
MET 302 Welding Survey	3
MET 341 Manufacturing Analysis	3
MET 344 Casting and Forming Processes	3
MET 345 Advanced Manufacturing Processes	3
MET 396 Manufacturing Professional Orientation	1
MET 444 Production Tooling	3
Total	19

AERONAUTICAL ENGINEERING TECHNOLOGY (AET)

AET 191 First-Year Seminar. (1–3)
selected semesters

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

AET 210 Measurements and Testing. (3)
fall
Measurement systems, components, system response, and the characteristics of experimental data. Lecture, lab. Prerequisites: MET 230; PHY 112, 114.

AET 215 Mechanics of Aerospace Systems. (3)
spring
Basic physics of flight. Principles and design of aircraft systems and powerplants.

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

AET 300 Aircraft Design I. (3)
fall
Applied aerodynamics, standard atmosphere, speed measurement, infinite and finite wings, airplane performance. Fee. Prerequisites: MAT 260; PHY 112, 114.

AET 310 Instrumentation. (3)
fall
Measurement systems, components, system response, and the characteristics of experimental data. Methods of collecting and analyzing data. Lecture, lab. Prerequisite: MAT 261. Pre- or corequisite: MET 313.

AET 312 Applied Engineering Mechanics: Dynamics. (3)
fall
Masses; motion kinematics; dynamics of machinery. Prerequisites: ETC 211; MAT 261.

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

AET 396 Aerospace Professional Orientation. (1)
fall
Career focus for Aeronautical Engineering Technology students. Familiarization with the aerospace industry. Prerequisite: junior standing.

AET 415 Gas Dynamics and Propulsion. (3)
spring
Introduces compressible flow, internal and external flow, and aerothermodynamic analysis of propulsion systems. Prerequisite: MET 434.

AET 417 Aerospace Structures. (3)
fall
Analysis and design of aircraft and aerospace structures. Shear flow. Semimonocoque structures. Effects of dynamic loading. Prerequisites: AET 300, 312; MET 313.

AET 420 Applied Aerodynamics and Wind Tunnel Testing. (3)
fall
Introduces viscous and inviscid flow and their relationship to aircraft lift and drag. Wind tunnel design and testing. Lecture, lab. Prerequisites: AET 300; MET 434.

AET 432 Applied Heat Transfer. (3)
fall
Heat transfer by conduction, convection, and radiation. Applies heat transfer to engineering design problems. Prerequisite: ETC 340. Pre- or corequisite: MET 434 or instructor approval.

AET 484 Internship. (1–12)
selected semesters

AET 487 Aircraft Design II. (3)
spring
Basic aerodynamics and airplane performance analysis methods applied to practical design project. Prerequisite: AET 300.

AET 492 Honors Directed Study. (1–6)
selected semesters

AET 493 Honors Thesis. (1–6)
selected semesters

AET 494 Special Topics. (1–4)
selected semesters

AET 498 Pro-Seminar. (1–7)
selected semesters

AET 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 56.

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 56.

MECHANICAL AND MANUFACTURING ENGINEERING TECHNOLOGY (MET)

MET 150 Introduction to Engineering Technology. (1)
fall
Introduces mechanical, manufacturing, and aeronautical engineering technology. Covers aspects of the industries utilizing these majors.

MET 160 CADD and Solid Modeling. (1)
selected semesters
Uses 3-dimensional solid modeling software to model mechanical parts and produce valid engineering drawings, including use of GD and T. Lab.

MET 191 First-Year Seminar. (1–3)
selected semesters

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

MET 230 Introduction to Engineering Materials. (2)
spring
Introduction to materials and their properties, emphasizing basic concepts and structures and how these properties relate to manufacturing and design.

MET 231 Manufacturing Processes. (3)
fall
Design documentation and material processes on plastics, ferrous and nonferrous materials, emphasizing orthographic projection, geometric dimensioning and tolerances. Lecture, lab. Prerequisite: MAT 117 or 170.

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

MET 300 Applied Material Science. (3)
fall
Principles of materials science emphasizing concepts relevant to design, manufacturing, and use. Covers metals, polymers, ceramics, and composites. 2 hours lecture, 1 hour lab. Prerequisite: MET 230 or instructor approval.

MET 302 Welding Survey. (3)
fall
Theory and application of industrial welding processes; introductory welding metallurgy and weldment design; SMAW, GTAW, GMAW, oxyacetylene, and brazing experiences. Lecture, lab. Prerequisite: junior or senior standing.

MET 309 Nondestructive Testing and Quality Assurance. (1)
fall
Part and material inspection using metrology and nondestructive inspection tools and techniques. Theory and application with use of pertinent standards. Lab. Prerequisite: MET 231.

MET 313 Applied Mechanics of Materials. (3)
spring
Stress, strain, stress-strain relations. Axial, shear, bending, torsional and combined loads and deflections. Prerequisite: ETC 211.

MET 314 Applied Mechanics of Materials Laboratory. (1)
spring
Measurements of loads and deformations relating stress and strain in axial, shear, bending, torsional, and combined loading configurations. 3 hours lab. Pre- or corequisite: MET 313.

MET 331 Machine Design I. (3)
fall
Applies mechanics to design of machine elements and structures. Stress analysis, failure modes, tolerances, cylindrical fits, and shaft design. Prerequisite: MET 313.

MET 341 Manufacturing Analysis. (3)
spring
Organizational and functional requirements for effective production. Analysis of industrial specifications, GDT, costs, and group technology. Writing assembly production plans. Prerequisite: MET 231.

MET 344 Casting and Forming Processes. (3)
spring
Analyzes various forming processes to determine load requirements necessary for a particular metal-forming operation. Information used to select equipment and design tooling. Metal casting processes and design of castings. Introduces powder metallurgy. Prerequisite: MET 300.

MET 345 Advanced Manufacturing Processes. (3)
spring
Material removal processes emphasizing advanced turning, milling, and machinability studies using cutting tools. CNC programming for machining and turning centers. Lecture, lab. Prerequisite: MET 231.

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

MET 396 Manufacturing Professional Orientation. (1)
fall
Career focus for Manufacturing Engineering Technology students. Familiarization with the manufacturing industry. Prerequisite: junior standing.

MET 401 Quality Assurance. (3)
spring
Introduces statistical quality control methods design of experiments, sampling, gauge requirements, specifications, quality assurance tools emphasizing CNC-CMM programming. Lecture, lab. Prerequisite: junior standing.

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 85.

MET 409 Applied Engineering Economics. (3)
spring
Fundamentals of engineering economics in a practical, industry-based approach. Includes effects of depreciation, taxes, inflation, and replacement analysis. Lecture, computer lab experiences.

MET 415 Manufacturing Simulation. (3)
spring
Computer simulation of manufacturing operations. Discrete event simulation models range from individual processes to whole factories. Lecture, computer lab experiences. Prerequisite: MET 345.

MET 416 Applied Computer-Integrated Manufacturing. (3)
fall
Techniques and practices of computer-integrated manufacturing, with emphasis on computer-aided design and computer-aided manufacturing. Prerequisite: MET 345.
General Studies: CS

MET 418 Composites Materials Manufacturing. (3)
spring
Introduces composite materials and associated manufacturing issues, including tooling, processes, and quality control. Related issues, including testing and joining. Lecture, lab. Credit is allowed for only MET 418 or 518. Prerequisite: MET 300 or instructor approval.

MET 432 Thermodynamics. (3)
spring
Thermodynamics of mixtures. Combustion process. Applies thermodynamics to power and refrigeration cycles. Prerequisite: ETC 340.

MET 433 Thermal Power Systems. (4)
selected semesters
Analyzes gas power, vapor power, and refrigeration cycles. Components of air conditioning systems. Direct energy conversion. Psychrometry. Analyzes internal combustion engines and fluid machines. Lecture, lab. Prerequisite: MET 432 or instructor approval.

MET 434 Applied Fluid Mechanics. (3)
spring
Fluid statics. Basic fluid flow equations. Viscous flow in pipes and channels. Compressible flow. Applies fluid measurement and flow in conduits. Prerequisite: ETC 340.

MET 435 Alternate Energy Sources. (3)
selected semesters
Alternate energy systems, energy use and its impact on the environment, and demonstrating practical alternative energy sources to fossil fuels. Prerequisite: instructor approval.

MET 436 Turbomachinery Design. (3)
selected semesters
Applies thermodynamics and fluid mechanics to the analysis of machinery design and power cycle performance predictions. Prerequisites: ETC 340; MET 434.

MET 438 Machine Design II. (3)
spring
Applies mechanics to the design of machine elements and structures. Emphasizes basics of gears, springs, brakes, clutches, and bearings. Prerequisite: AET 312; MET 331.

MET 442 Specialized Production Processes. (3)
fall
Nontraditional manufacturing processes, emphasizing EDM, ECM, ECG, CM, PM, HERF, EBW, and LBW. Prerequisite: MET 231.

MET 443 CNC Computer Programming. (3)
fall
Theory and application of N/C languages using CAM software and CNC machine tools. Lecture, lab. Prerequisite: MET 345 or instructor approval.

MET 444 Production Tooling. (3)
fall
Design and fabrication of jigs, fixtures, and special industrial tooling related to manufacturing methods. Lecture, lab. Prerequisite: MET 345.

MET 451 Introduction to Automation. (3)
spring
Introduces automation. Topics include assembly techniques, fixed and flexible automation systems, robots, material-handling systems, sensors, and controls. Lecture, lab. Prerequisite: MET 345.

MET 452 Implementation of Robots in Manufacturing. (3)
selected semesters
Robotic workcell design, including end effectors, parts presenters, and optimum material flow. Prerequisite: MET 451 or instructor approval.

MET 455 Automation Systems Integration. (3)
fall
Applies sensors and devices and their integration with PLCs and computers into automated devices and systems. Lecture, lab. Prerequisites: EET 403; MET 451.

MET 460 Manufacturing Capstone Project I. (3)
fall
Group project designing, evaluating, and analyzing components, assemblies, and systems. Develop products/manufacturing techniques demonstrating state-of-the-art technology. Lecture, lab. Prerequisites: MET 331, 341; senior standing.

MET 461 Manufacturing Capstone Project II. (3)
spring
Small-group projects applying manufacturing techniques, with emphasis on demonstrating state-of-the-art technology. Lecture, lab. Prerequisite: MET 460 or instructor approval.

MET 484 Internship. (1–12)
selected semesters

MET 492 Honors Directed Study. (1–6)
selected semesters

MET 493 Honors Thesis. (1–6)
selected semesters

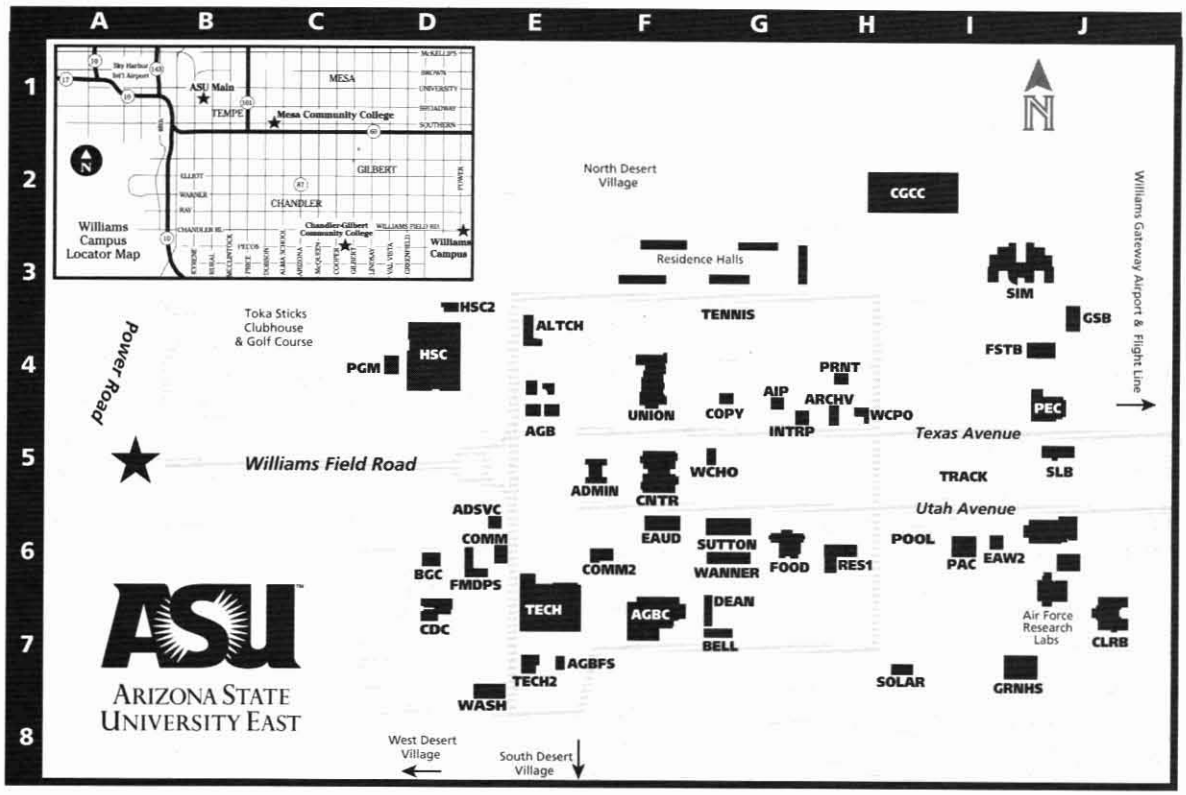
MET 494 Special Topics. (1–4)
fall and spring
Topics may include the following:
- Composite Materials Manufacturing. (3)
- Consumer Manufacturing. (1–3)
- Manufacturing Resource Management. (3)
- Packaging Design. (1–3)

MET 498 Pro-Seminar. (1–7)
selected semesters

MET 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 56.

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 56.



ADMIN	Administration Building (F5)
ADSVC	Administrative Services (E5)
AGB	Morrison School of Agribusiness and Resource Management Complex 1-4 (E4)
AGBC	Agribusiness Center (F7)
AGBFS	Agribusiness Food Science Lab (E7)
AIP	American Indian Programs (G4)
ALTCH	Altitude Chamber Building (E3)
ARCHV	Library Archives (H4)
BELL	Bell Hall (F7)
BGC	Boys and Girls Club (D6)
CDC	Child Development Center (D7)
CGCC	Chandler-Gilbert Community College (H2)
CLRB	Classroom Building (J7)
CNTR	Academic Center Building (F5)
COMM	Telecommunications (D6)
COMM2	Communications Annex (E6)
COPY	Williams Express Copy Services (G4)
DEAN	Dean Hall (F6)
EAUD	Auditorium (F5)
EAW2	Exercise Instructional Lab Building (I6)
FMDPS	Facilities Management/DPS (D6)
FOOD	Williams Campus Dining Hall (G6)
FSTB	Fire Science Technology Building (I4)
GRNHS	Greenhouses (I7)
GSB	General Studies Building (J4)
HSC	Health Sciences Center (D4)
HSC2	Health Sciences Center Research (D4)
INTRP	International Projects (IG4)
PAC	Physical Activity Center (I6)
PEC	Physical Education Center (J5)
PGM	Professional Golf Management (D4)
POOL	Swimming Pool (H6)
PRNT	IMT Print Facility (H4)
RES1	Freshman Experience Dorm (H6)
SIM	Flight Simulator Building (I3)
SLB	Science Lab Building (J5)
SOLAR	Photovoltaic Testing Lab (H7)
SUTTON	Sutton Hall (G6)
TECH	Technology Center (E7)
TECH2	Technology Center Annex (E7)
TENNIS	Tennis Courts (G3)
UNION	Williams Campus Union (F4)
WANNER	Wanner Hall (G6)
WASH	Launderette (D7)
WCHO	Williams Campus Housing Office (G5)
WCPO	Williams Campus Post Office (H4)

ASU East Directory

For the "ASU Main Directory," see page 505. For the "ASU West Directory," see page 662. For the "ASU Extended Campus Directory," see page 681.

Organization	Location	Telephone	Web Address
Agribusiness and Resource Management, Morrison School of	CNTR 20	480/727-1585	www.east.asu.edu/msabr
Professional Golf Management	CNTR 20	480/727-1017	www.east.asu.edu/msabr/pgm
American Indian Programs	AIP	480/727-1161 480/727-1075	www.east.asu.edu/aip
Bookstore	CNTR 102	480/727-1168	www.asu.edu/east/admin/business.htm
Campus Copy Center, Williams	COPY	480/727-1616	www.asu.edu/east/admin/business.htm
Campus Union	UNION	480/727-1098	www.asu.edu/east/cls/union.htm
Cashiering Services	CNTR 81	480/727-1081	www.asu.edu/east/admin/business.htm
Computing Commons, ASU East	CNTR 150	480/727-1118	www.east.asu.edu/infotech/labs
East College	CNTR 92	480/727-1515	www.east.asu.edu/ecollege
Advising		480/727-1333	—
Applied Biological Sciences	CNTR 92	480/727-1515	—
Applied Psychology, Faculty of	CNTR 92	480/727-1515	www.east.asu.edu/ecollege/appliedpsych
Business Administration, Faculty of	CNTR 92	480/727-1515	www.east.asu.edu/ecollege/businessadmin
Education, Faculty of	COMM2	480/727-1103	www.east.asu.edu/ecollege/education
Exercise and Wellness, Department of	CLRB 102	480/727-1945	www.east.asu.edu/ecollege/wellness
Human Health Studies, Faculty of	CLRB 102	480/727-1065	www.east.asu.edu/ecollege/humanhealth
Multimedia Writing and Technical Communication, Faculty of	CNTR 92	480/727-1515	www.east.asu.edu/ecollege/multimedia
Nutrition, Department of	HSC 1386	480/727-1728	www.east.asu.edu/ecollege/nutrition
Fitness Center, Williams Campus	WCFC Bldg	480/988-8400	www.asu.edu/east/cls/recreation.htm
General Information	CNTR Garden Level	480/727-3278	www.east.asu.edu
Housing, Williams Campus	WCHO Bldg	480/727-1700	www.asu.edu/east/cls/housing
Learning Center	CNTR 160	480/727-1452	www.east.asu.edu/learningcenter
Library Services	CNTR 110	480/727-1037	eastlib.east.asu.edu
OASIS (Student Services)*	CNTR Garden Level	480/727-3278	www.east.asu.edu/sta/contact1.html
Provost, Office of the	CNTR 30	480/727-1028	—
Student Health Services	HSC	602/222-6568	www.asu.edu/east/student/stuheal.html
Technology and Applied Sciences, College of	CNTR 10	480/727-1874	www.east.asu.edu/ctas
Aeronautical Management Technology, Department of	SIM 201	480/727-1381	eastair.east.asu.edu
Electronics and Computer Engineering Technology, Department of	TECH 101	480/727-1029	www.east.asu.edu/ctas/ecet
Information and Management Technology, Department of	TECH 102	480/727-1781	www.east.asu.edu/ctas/imt
Mechanical and Manufacturing Engineering Technology, Department of	SIM 295	480/727-1584	www.east.asu.edu/ctas/mmet

* OASIS includes ASU Sun Cards, Office of the Registrar, Student Business Services, Student Financial Assistance, Undergraduate Admissions, and Williams Campus Parking Decals.

ASU East Faculty and Academic Professionals

A

Adams, Troy B. (2002), Assistant Professor of Exercise and Wellness; B.S., M.S., Brigham Young University; Ph.D., University of Texas, Austin

Autore, Donald D. (1959), Professor Emeritus of Technology; B.S.E., University of Michigan; M.S.E., Arizona State University

B

Backus, Charles E. (1968), Professor of Electrical Engineering; Provost, ASU East; Vice President, ASU; B.S.M.E., Ohio University; M.S., Ph.D., University of Arizona

Barchilon, Marian G. (1989), Associate Professor of Technical Communication; B.A., State University of New York, Binghamton; M.S., Northeastern University

Barrett, Thomas W. (1950), Professor Emeritus of Agribusiness and Resource Management; B.S., Brigham Young University; M.S., Ph.D., Cornell University

Baxter, Harry R. (1982), Professor Emeritus of Electronics Engineering Technology; B.A., New York University; M.B.A., Fairleigh Dickinson University; M.Tech., Arizona State University

Bergeron, Bette S. (2000), Professor of Education; Head, Faculty of Education; B.S.Ed., University of Maine, Orono; M.S.Ed., Ph.D., Purdue University

Biekert, Russell G. (2001), Associate Professor of Mechanical and Manufacturing Engineering Technology; B.S., M.S., Southern Illinois University; Ed.D., Arizona State University

Brady, Ward W. (1973), Professor of Applied Biological Sciences; Head, Applied Biological Sciences; B.S., M.S., Ph.D., Colorado State University

Brock, John H. (1977), Professor of Applied Biological Sciences; Coordinator, Sustainable Technologies, Agribusiness, and Resources Center; B.S., M.S., Fort Hayes State University; Ph.D., Texas A&M University

Brown, Walter C. (1966), Professor Emeritus of Technology; B.S., Northwest Missouri State University; M.Ed., Ed.D., University of Missouri, Columbia

Brownson, Charles W. (1980), Librarian, Library Services, ASU East; Director, Library Services ASU East; B.A., South Dakota State University; M.F.A., University of Oregon; M.L.S., University of California, Berkeley

Burdette, Walter E. (1956), Professor Emeritus of Technology; B.S., M.S., Kansas State College of Pittsburg; Ed.D., University of Missouri, Columbia

Burk, Karl W. (1949), Professor Emeritus of Technology; B.A., M.A., Arizona State University; Ed.D., Bradley University

Burkett, Lee N. (1974), Professor of Exercise and Wellness; B.A., M.A., San Diego State University; Ph.D., Washington State University

Busch, Jay S. (2001), Lecturer of General Studies; B.A., Michigan State University; M.A., Arizona State University

C

Carlsen, Paul A. (1978), Professor Emeritus of Technology; B.A.E., M.N.S., Ed.D., Arizona State University

Cavalliere, William A. (1946), Professor Emeritus of Technology; B.A., M.A., Arizona State University

Chalquest, Richard R. (1971), Professor Emeritus of Agribusiness and Resource Management; B.S., D.V.M., Washington State University; M.S., Ph.D., Cornell University

Collins, Donald W. (1989), Professor of Mechanical and Manufacturing Engineering Technology; B.Arch., Virginia Polytechnic Institute and State University; M.S., Ph.D., University of Illinois, Chicago

Cooke, Nancy J. (2003), Professor of Applied Psychology; B.A., George Mason University; M.A., Ph.D., New Mexico State University

Corbin, Charles B. (1982), Professor of Exercise and Wellness; B.S., University of New Mexico; M.S., University of Illinois; Ph.D., University of New Mexico

Cox, Frank E. (1972), Professor Emeritus of Technology; B.S.M.E., Purdue University; M.S.E., Arizona State University

D

D'Angelo, Barbara J. (2001), Assistant Librarian, ASU East Library Services; B.A., Emmanuel College; M.S., University of Illinois, Urbana-Champaign

Daneke, Gregory A. (1982), Professor of Agribusiness and Resource Management; B.A., M.A., Brigham Young University; Ph.D., University of California, Santa Barbara

Danielson, Scott G. (1999), Associate Professor of Mechanical and Manufacturing Engineering Technology; Chair, Department of Mechanical and Manufacturing Engineering Technology; B.S., M.S., University of Wyoming; Ph.D., North Dakota State University

Dixon, Kathleen S. (2000), Lecturer of Nutrition; B.S., University of Arizona; M.Ed., Northern Arizona University

Dolin, Penny Ann (1998), Lecturer of Information and Management Technology; B.A., Bard College; M.S., Arizona State University

Duff, Jon M. (1997), Professor of Information and Management Technology; B.S., M.S., Purdue University; Ph.D., Ohio State University

E

Edwards, Mark R. (1978), Professor of Agribusiness and Resource Management; B.S.M.E., United States Naval Academy; M.B.A., D.B.A., Arizona State University

Edwards, Marvin J. (1959), Professor Emeritus of Technology; B.S., M.A., Arizona State University

F

Fordemwalt, James N. (1987), Professor Emeritus of Electronics and Computer Engineering Technology; B.S., M.S., University of Arizona; Ph.D., Iowa State University of Science and Technology

G

Gannod, Barbara D. (1998), Assistant Professor of Electronics and Computer Engineering Technology; B.Sc., Calvin College; M.Sc., Ph.D., Michigan State University

Gesell, Laurence E. (1984), Professor of Aeronautical Management Technology; B.A., Upper Iowa University; M.P.A., University of San Francisco; Ph.D., Arizona State University

Gordon, Richard S. (1980), Professor Emeritus of Agribusiness and Resource Management; A.B., University of Rochester; M.A., Harvard University; Ph.D., Massachusetts Institute of Technology

Gray, Robert D. (2001), Assistant Professor of Applied Psychology; B.A., Queen's University (Canada); M.A., Ph.D., York University (Canada)

Green, Douglas M. (1990), Associate Professor of Applied Biological Sciences; B.S., Oregon State University; M.S., North Dakota State University; Ph.D., Oregon State University

Grossman, Gary M. (1994), Associate Professor of Information and Management Technology; Project Director, International Projects Unit; B.A., University of the Pacific; M.S., Ph.D., Purdue University

Gryder, Missy (2001), Lecturer of Education; B.A., M.B.A., Ed.D., Arizona State University

H

Hall, Richard E. III (2002), Lecturer of Nutrition; B.S., Northern Arizona University; M.S., Arizona State University

Hampl, Jeffrey (1998), Assistant Professor of Nutrition; B.S., Liberty University; M.S., University of Massachusetts, Lowell; Ph.D., University of Nebraska

Harris, La Verne Abe (1999), Lecturer of Information and Management Technology; B.A., M.Tech., Arizona State University

Hefner, Stephen P. (1973), Instructional Professional of Agribusiness and Resource Management, Morrison School of Agribusiness and Resource Management; B.S., Illinois State University; M.S., Arizona State University

Hild, Nicholas R. (1983), Professor of Information and Management Technology; B.S.M.E., M.S.Enve., University of Iowa; Ph.D., Union Graduate School

Hirata, Ernest T. (1974), Associate Professor of Information and Management Technology; B.A., San Diego State College; Ed.D., Arizona State University

Hopper, Lee Ann (2001), Lecturer of Education; B.S., Texas Tech University; M.A., Arizona State University

Horowitz, Renee B. (1986), Professor Emerita of Information and Management Technology; B.A., Brooklyn College; M.A., Ph.D., University of Colorado

Hughner, Renee D. (2002), Assistant Professor of Agribusiness and Resource Management; B.S., M.B.A., University of Massachusetts, Amherst; Ph.D., Arizona State University

Humble, Jane E. (1989), Associate Professor of Information and Management Technology; B.S.E., M.S.E., Ph.D., Arizona State University

Hutchins, Andrea M. (2001), Assistant Professor of Nutrition; B.S., Kansas State University; M.S., Ph.D., University of Minnesota

Hutt, Roger W. (1975), Associate Professor of Business Administration; Head, Faculty of Business Administration; B.S., M.B.A., Ohio State University; Ph.D., Michigan State University

J

Jackson, Andrew E. (1995), Associate Professor of Aeronautical Management Technology; B.A., University of Louisville; M.B.A., Embry-Riddle Aeronautical University; Ph.D., University of Central Florida

Johnston, Carol S. (1986), Professor of Nutrition; B.S., University of Michigan; M.S., Ph.D., University of Texas, Austin

K

Kagan, Albert (1992), Professor of Agribusiness and Resource Management; B.S., M.S., Ph.D., Iowa State University of Science and Technology

Karp, Merrill R. (1994), Associate Professor of Aeronautical Management Technology; B.S., Arizona State University; M.A., Central Michigan University; Ph.D., Walden University

Keith, Marlow F. (1946), Professor Emeritus of Technology; B.A., M.A., Arizona State University

Kelley, Donald G. (1980), Professor Emeritus of Manufacturing and Aeronautical Engineering Technology; B.S., M.S., Arizona State University

Kigin, Denis J. (1958–65; 1967), Professor Emeritus of Technology; Dean Emeritus, Continuing Education and Summer Sessions; B.S., Mankato State University; M.S., University of Wisconsin, Stout; Ed.D., University of Missouri

Kime, Charles H. (1999), Assistant Professor of Information and Management Technology; B.S., Arizona State University; M.B.A., University of Phoenix; D.P.A., Arizona State University

Kisielewski, Robert V. (1978), Professor Emeritus of Technology; B.S.M.E., M.S.M.E., University of Wisconsin, Madison

Kleemann, Gary L. (1979), Administrative Professional, Academic Programs; Director, E-Learning; B.A., M.S., San Jose State University; Ph.D., Arizona State University

Koehnemann, Harry E. (2001), Associate Professor, Electronics and Computer Engineering Technology; B.S., Northern Arizona University; M.S., Ph.D., Arizona State University

L

Lawler, Eugene D. (1967), Professor Emeritus of Technology; B.S., Northern State College; M.A., Arizona State University

Lestar, Dot J. (1995), Lecturer of Information and Management Technology; B.S., M.Tech., Arizona State University

Lindley, James (2001), Senior Lecturer of Preveterinary Medicine; B.S., D.V.M., University of Missouri

Lindquist, Timothy E. (1985), Professor of Electronics and Computer Engineering Technology; Chair, Department of Electronics and Computer Engineering Technology; B.S., Purdue University; M.S., Ph.D., Iowa State University

Lytle, Robert G. (1972), Professor Emeritus of Agribusiness and Resource Management; B.S., Western Kentucky University; M.S., Arizona State University

M

Macia, Narciso F. (1990), Associate Professor of Electronics and Computer Engineering Technology; B.S., M.S., University of Texas, Arlington; Ph.D., Arizona State University

Maddy, Kenneth H. (1980), Professor Emeritus of Agribusiness and Resource Management; B.S., Pennsylvania State University; M.S., University of Wisconsin, Madison; Ph.D., Pennsylvania State University

Maid, Barry M. (2000), Professor of Multimedia Writing and Technical Communication; Head, Faculty of Multimedia Writing and Technical Communication; B.A., University of Wisconsin, Madison; M.A., University of Texas, Austin; Ph.D., University of Massachusetts, Amherst

Maisel, James E. (1985), Professor Emeritus of Electronics and Computer Engineering Technology; B.Eng.Sci., B.E.E., Fenn College; M.S.E.E., Ohio State University

Manfredo, Mark R. (1999), Assistant Professor of Agribusiness and Resource Management; B.S., California State University, Fresno; M.S., New Mexico State University; Ph.D., University of Illinois, Urbana

Manore, Melinda M. (1984), Professor Emerita of Nutrition; B.S., Seattle Pacific University; M.S., University of Oregon; Ph.D., Oregon State University

Marquardt, Raymond A. (1997), Professor of Agribusiness and Resource Management; Dean, Morrison School of Agribusiness and Resource Management; B.S., M.S., Colorado State University; Ph.D., Michigan State University

Martin, Chris A. (1990), Associate Professor of Applied Biological Sciences; B.S., California Polytechnic State University and University of Southern California; M.S., Auburn University; Ph.D., University of Florida

Matson, John H. (1978), Associate Professor of Information and Management Technology; B.S., M.S., Illinois State University

Matthews, James B. (1989), Professor Emeritus of Aeronautical Technology; B.S., Rose-Hulman Institute of Technology; M.S., Massachusetts Institute of Technology; Ph.D., University of Arizona

McBrien, Edward F. (1986), Professor Emeritus of Electronic/Computer Technology; B.S.E., Fenn College; M.S.E.E., Cleveland State University

McCurry, William K. (1995), Professor of Aeronautical Management Technology; Chair, Department of Aeronautical Management Technology; B.S., Purdue University; M.S., Troy State University; Ph.D., University of Kansas

McHenry, Albert L. (1978), Professor of Electronics and Computer Engineering Technology; Dean, College of Technology and Applied Sciences; B.S., Southern University and A&M College; M.S., Ph.D., Arizona State University

Mermis, William L. (1995), Professor of Human Health; Head, Faculty of Human Health Studies; B.S., M.S., Saint Louis University; Ph.D., Arizona State University

Millard, Bruce R. (1988), Associate Professor of Electronics and Computer Engineering Technology; B.A., M.S., Washington State University; Ph.D., Arizona State University

Miller, Victor J. (1958), Professor Emeritus of Agribusiness and Resource Management; B.S., M.S., Ph.D., University of Illinois

Miller, William H. (1984), Associate Professor of Applied Biological Sciences; B.S., M.S., Ph.D., Washington State University

Minter, Marshall R. Jr. (1965), Professor Emeritus of Technology; B.S.M.E., Purdue University; M.S.M.E., University of Arizona

Monte, Woodrow (1979), Professor Emeritus of Nutrition; B.S., New Mexico Institute of Mining and Technology; M.S., Ph.D., Colorado State University

Moody, E. Grant (1951), Professor Emeritus of Agribusiness and Resource Management; B.S., University of Arizona; M.S., Kansas State University; Ph.D., Purdue University

Munukutla, Lakshmi V. (1987), Professor of Electronics and Computer Engineering Technology; Associate Dean, College of Technology and Applied Sciences; B.S., M.S., Andhra University (India); Ph.D., Ohio University

N

Nam, Changho (1998), Associate Professor of Mechanical and Manufacturing Engineering Technology; B.S., M.S., Seoul National University (South Korea); Ph.D., Purdue University

Newman, Richard L. (2001), Assistant Administrative Professional; Director, Training Services, College of Technology and Applied Sciences; B.S., M.S., Arizona State University

O

O'Brien, Marc H. (1997), Lecturer of Aeronautical Management Technology; B.A., Boston University; M.S., Indiana State University

Ohmart, Robert D. (1970), Professor of Applied Biological Sciences; B.S., M.S., New Mexico State University; Ph.D., University of Arizona

Olson, Larry W. (1995), Associate Professor of Information and Management Technology; B.S., Baylor University; Ph.D., University of Pennsylvania

P

Palmgren, Dale E. (1984), Associate Professor of Mechanical and Manufacturing Engineering Technology; Assistant Dean, College of Technology and Applied Sciences; B.S., M.S., Ph.D., University of Wisconsin, Madison

Pardini, Louis J. (1967), Professor Emeritus of Technology; B.A., A.M., Idaho State University; Ed.D., University of Northern Colorado

Patterson, Paul M. (1995), Associate Professor of Agribusiness and Resource Management; B.S., Auburn University; M.S., Ph.D., Purdue University

Pearce, Martha V. (1977), Professor Emerita of Technology; B.S., Columbia University; M.S., Boston University; Ed.D., Arizona State University

Pearson, Michael W. (1998), Assistant Professor of Aeronautical Management Technology; B.A., University of Houston; M.B.A., J.D., Arizona State University

Peterson, Danny M. (1999), Associate Professor of Information and Management Technology; B.S., University of Idaho; M.B.A., California State University, Sacramento; M.S., Ph.D., Arizona State University

Peterson, Edward R. (1977), Professor Emeritus of Electronics and Computer Engineering Technology; B.S.E.E., Fairleigh Dickinson University; M.S.E.E., Arizona State University

Phillips, Wayne T. (1997), Assistant Professor of Exercise and Wellness; Cert. Ed., Cardiff College of Education, Cardiff (United Kingdom); M.S., Loughborough University of Technology (United Kingdom); Ph.D., Arizona State University

Post, Alvin (2000), Assistant Professor of Mechanical and Manufacturing Engineering Technology; B.S., University of Arizona; M.S., Stanford University; Ph.D., University of Hawaii

Prest, Alison (2002), Lecturer of Education; B.A., Arizona State University; M.S.Ed., Northern Arizona University

Prust, Zenas A. (1959), Professor Emeritus of Technology; B.S., University of Wisconsin, Stout; M.A., University of Minnesota, Twin Cities; Ed.D., University of Northern Colorado

R

Raccach, Moshe (1980), Associate Professor of Agribusiness and Resource Management; B.Sc., M.Sc., The Hebrew University (Israel); Ph.D., Cornell University

Rajadas, John N. (1996), Associate Professor of Mechanical and Manufacturing Engineering Technology; B.Tech., Indian Institute of Technology (India); M.S., Ph.D., Georgia Institute of Technology

Reed, William H. (1968), Professor Emeritus of Mechanical and Manufacturing Engineering Technology; B.S., University of Oklahoma; M.S., Arizona State University

Richards, Timothy J. (1994), Associate Professor of Agribusiness and Resource Management; B.Comm., University of British Columbia; M.A., Ph.D., Stanford University

Richardson, Grant L. (1953), Professor Emeritus of Agribusiness and Resource Management; B.S., M.S., University of Arizona; Ph.D., Oregon State University

Robinson, Daniel O. (1950), Professor Emeritus of Agribusiness and Resource Management; A.B., Brigham Young University; M.S., University of Arizona; Ph.D., Ohio State University

Robertson, John M. (2001), Professor of Electronics and Computer Engineering Technology; B.S., University of St. Andrews (United Kingdom); M.S., University of Dundee (United Kingdom); Ph.D., University of Edinburgh (United Kingdom)

Roe, Keith B. (1979), Professor Emeritus of Technology; B.S., Wisconsin State College; M.A., University of Michigan

Rogers, Bradley B. (1984), Associate Professor of Mechanical and Manufacturing Engineering Technology; B.S., M.S., Montana State University; Ph.D., Arizona State University

Roper, Devon J. (1966), Professor Emeritus of Aeronautical Technology; B.S., Utah State University; M.S., Arizona State University

S

Sadowski, Mary A. (1999), Professor of Information and Management Technology; B.S.E., Bowling Green University; M.A., Ohio State University; Ph.D., Purdue University

Salmirs, Seymour (1981), Professor Emeritus of Technology; B.A.E., M.S.A.E., Georgia Institute of Technology

Schildgen, Thomas E. (1981), Professor of Information and Management Technology; Chair, Department of Information and Management Technology; B.S., M.S., Illinois State University; Ed.D., Northern Arizona University

Schmidt, Peter A. (1978), Professor Emeritus of Manufacturing and Aeronautical Engineering Technology; B.S., Northern Illinois University; M.A., Ed.D., Arizona State University

Schmitz, Troy G. (1998), Assistant Professor of Agribusiness and Resource Management; B.S., University of Saskatchewan (Canada); M.S., Ph.D., University of California, Berkeley

Schoen, Robert A. (1966), Professor Emeritus of Technology; B.S., M.S., Arizona State University

Schvaneveldt, Roger W. (2000), Professor of Applied Psychology; Head, Faculty of Applied Psychology; B.A., University of Utah; M.S., Ph.D., University of Wisconsin, Madison

Schwalm, David E. (1986), Associate Professor of English; Dean, East College; Vice Provost, Academic Programs, ASU East; B.A., Carlton College; M.S., Ph.D., University of Chicago

Seperich, George J. (1976), Professor of Agribusiness and Resource Management; Associate Dean, Morrison School of Agribusiness and Resource Management; B.S., Loyola University, Chicago; M.S., Ph.D., Michigan State University

Shepard, Christina W. (1999), Academic Associate of Nutrition; B.S., University of Arizona; M.S., Arizona State University

Shultz, Clifford J. (1992), Professor of Agribusiness and Resource Management; Marley Foundation Chair in Consumer Food Marketing; B.A., DePauw University; M.S., Ph.D., Columbia University

Skilton, Paul F. (2003), Assistant Professor of Business Administration; B.A., University of California; M.B.A., Boston College; Ph.D., Arizona State University

Steele, Kelly P. (2002), Associate Professor of Applied Biological Sciences; B.A., Ph.D., University of California

Stiles, Philip G. (1969), Professor Emeritus of Agribusiness and Resource Management; B.S., University of Arkansas; M.S., University of Kentucky; Ph.D., Michigan State University

Stone, William J. (1967), Professor of Exercise and Wellness; Chair, Department of Exercise and Wellness; B.S., Boston University; M.S., Florida State University; Ed.D., University of California, Berkeley

Strawn, Roland S. (1967), Professor Emeritus of Technology; B.S.E.E., M.S.E.E., University of Illinois; Ph.D., Arizona State University

Stutz, Jean C. (1981), Associate Professor of Applied Biological Sciences; B.S., Ursinus College; M.S., University of Delaware; Ph.D., Pennsylvania State University

Sundararajan, Rajeswari (1996), Associate Professor of Electronics and Computer Engineering Technology; B.S., University of Madras (India); M.S., Indian Institute of Science (India); Ph.D., Arizona State University

Swan, Pamela (1994), Associate Professor of Exercise and Wellness; B.A., University of California, Santa Barbara; M.S., University of North Carolina, Greensboro; Ph.D., University of Tennessee

T

Taysom, Elvin D. (1953), Professor Emeritus of Agribusiness and Resource Management; B.S., University of Idaho; M.S., Utah State University; Ph.D., Washington State University

Thomason, Leslie L. (1969), Professor Emeritus of Technology; A.B., M.A., Ed.D., University of Oklahoma

Thor, Eric P. (1990), Professor of Agribusiness and Resource Management; B.S., M.S., Ph.D., University of California, Berkeley

Tripp, Wayne E. (2002), Lecturer of Aeronautical Management Technology; B.S., Liberty University; M.E., Lynchburg College

Tudor-Locke, Catrine (2001), Assistant Professor of Exercise and Wellness; B.A., University of Lethbridge (Canada); M.S., Dalhousie University (Canada); Ph.D., University of Waterloo (Canada)

Turney, Mary Ann (1999), Associate Professor of Aeronautical Management Technology; B.A., LeMoyne College; M.A., Hofstra University; Ed.D., Nova Southeastern University

V

Vaughan, Linda A. (1982), Professor of Nutrition; Chair, Department of Nutrition; B.S., University of California, Davis; M.N.S., Cornell University; Ph.D., University of Arizona

W–Z

Watkins, Thomas B. (1972), Professor Emeritus of Technology; B.S., University of Wyoming; M.S., Arizona State University

Watson, Emma J. (1999), Lecturer of Business Administration; B.A., Sonoma State University; M.Ed., Western Washington University

Welty, Ellen L. (1996), Reference/Instruction Librarian, ASU East Library Services; B.A., University of Wyoming; M.L.S., University of Arizona

Wenhart, James C. (1996), Senior Lecturer of Education; B.S., M.Ed., Arizona State University

Whitehouse, Richard O. (1997), Senior Lecturer of Electronics and Computer Engineering Technology; B.S., Worcester State College; M.S., University of Tennessee

Whysong, Gary L. (1974), Associate Professor of Applied Biological Sciences; B.S., M.S., Montana State University; Ph.D., University of Wyoming

Wilson, Daniel (1978), Senior Lecturer of Information and Management Technology; B.S., Drexel University; M.S.E., Ph.D., Arizona State University

Winham, Donna M. (2002), Assistant Professor of Nutrition; B.S., Keene State College; M.A., University of Arizona; Dr.P.H., University of California, Los Angeles

Wood, Billy G. (1977), Professor Emeritus of Electronics and Computer Engineering Technology; A.B., University of California; B.S., Eastern Illinois University; M.S., University of Arizona

Woodruff, Larry (1998), Lecturer of Exercise and Wellness; B.S., University of Oregon; M.S., Western Oregon University

Woolf, Kathleen (2002), Assistant Professor of Nutrition; B.S., Arizona State University; M.S., University of California, Los Angeles; Ph.D., Arizona State University

Zeng, Guoliang (1991), Associate Professor of Electronics and Computer Engineering Technology; B.S., Chengdu Telecommunication Institute (China); M.S., University of California, San Diego; M.N.S., Ph.D., Arizona State University

ASU East Administrative Personnel

Academic Administration

Provost, ASU East; Vice President, ASU ..... Charles E. Backus
Vice Provost, Academic Programs ..... David E. Schwalm
Dean, Student Affairs ..... Gary L. McGrath
Director, Academic Services ..... C. Vinette Williams
Vice Provost, Administrative Services ..... Terry C. Isaacson
Director, American Indian Programs ..... Phillip J. Huebner
Director, Information Technology ..... Kati L. Weingartner
Interim Director, Public Affairs ..... C. Vinette Williams
Director, Library Services ..... Charles W. Brownson
Vice Provost, Planning and Budget ..... Sheila L. Ainlay
Director, Research and Sponsored Projects ..... Jean N. Humphries
Marley Foundation Chair in Consumer Food Marketing ..... Clifford J. Shultz
Coordinator, Sustainable Technologies, Agribusiness, and Resources Center ..... John H. Brock

College of Technology and Applied Sciences

Dean, College of Technology and Applied Sciences ..... Albert L. McHenry
Associate Dean, College of Technology and Applied Sciences ..... Lakshmi V. Munukutla
Assistant Dean, College of Technology and Applied Sciences ..... Dale E. Palmgren
Chair, Department of Aeronautical Management Technology ..... William K. McCurry
Chair, Department of Electronics and Computer Engineering Technology ..... Timothy E. Lindquist
Chair, Department of Information and Management Technology ..... Thomas E. Schildgen
Chair, Department of Mechanical and Manufacturing Engineering Technology ..... Scott G. Danielson
Project Director, International Projects Unit ..... Gary M. Grossman

East College

Dean, East College ..... David E. Schwalm
Chair, Department of Exercise and Wellness ..... William J. Stone
Chair, Department of Nutrition ..... Linda A. Vaughan
Head, Applied Biological Sciences ..... Ward W. Brady
Head, Faculty of Applied Psychology ..... Roger W. Schvaneveldt
Head, Faculty of Business Administration ..... Roger W. Hutt
Head, Faculty of Education ..... Bette S. Bergeron
Head, Faculty of Human Health Studies ..... William L. Mermis
Head, Faculty of Multimedia Writing and Technical Communication ..... Barry M. Maid

Morrison School of Agribusiness and Resource Management

Dean, Morrison School of Agribusiness and Resource Management ..... Raymond A. Marquardt
Associate Dean, Morrison School of Agribusiness and Resource Management ..... George J. Seperich

ASU West

www.west.asu.edu **Elaine P. Maimon, Provost, ASU West; Vice President, ASU**

Arizona State University West, a vital component of ASU's multicampus structure, serves nearly 7,000 students on its growing campus in northwest Phoenix. The four-year urban campus features a friendly, supportive atmosphere in the context of a nationally acclaimed, PAC-10 University. Courses at ASU West lead to 29 bachelor's degrees, nine master's degrees, and eight professional certificates through the Colleges of Arts and Sciences, Education, and Human Services; the School of Management; and the Division of Collaborative Programs.

Faculty and staff are dedicated to serving the evolving needs of high school graduates, working adults, and returning and continuing students. Expanding campus facilities and programs along with a diverse student body, faculty, and staff all contribute to a culturally rich academic and social campus environment.

ASU West's mission encompasses research and teaching, faculty-student research collaboration, interdisciplinary perspectives, and the development of university-community partnerships. Academic programs, classes, and student services are innovative and provide students with a high-quality education

ASU West prides itself on serving the diverse needs of students who balance academics with the multiple demands of work and family through convenient scheduling of small classes. Courses at ASU West lead to 29 bachelor's degrees, nine master's degrees, and eight professional certificates. Academic programs are linked directly to community needs, providing relevant, applied learning opportunities, such as internships. The campus mission balances teaching and research, faculty-student collaboration, interdisciplinary perspectives, and many thriving university-community partnerships.The faculty and staff share a deep commitment to learner-centered education.

ASU West offers many on-campus services and facilities, including a multimedia resource library, state-of-the-art computer classrooms and labs, housing facilities, tutoring services, bookstore, cafeteria, credit union, fitness center, recreational facilities, child care, and post office, plus many student activities, clubs, and organizations. ASU West facilities are completely accessible for those with disabilities, with academic services provided by a disability resource center. Classes are offered in the day and evening, as well as on weekends, and via television and the Internet.

The architecture and courtyards at ASU West are modeled on those of the University of Oxford in Great Britain, enhanced by a beautifully landscaped natural environment featuring widely acclaimed public art. The campus occupies approximately 300 square acres between 43rd and 51st Avenues on West Thunderbird Road in Phoenix, easily accessed from Interstate 17 and Loop 101.

ACCREDITATION

ASU West is accredited by the Higher Learning Commission and is a member of the North Central Association. For more information, call 312/263-0456, access the Web site at www.ncahigherlearningcommission.org, or write

HIGHER LEARNING COMMISSION
30 NORTH LaSALLE ST
SUITE 2400
CHICAGO IL 60602-2504

Professional programs in various academic areas are also accredited.

The Business and Accountancy degree programs in the School of Management are accredited by AACSB International—The Association to Advance Collegiate Schools of Business. The Accountancy program is also an Endorsed Internal Auditing Program by the Institute of Internal Auditors.

In the College of Human Services, the Department of Recreation and Tourism Management is accredited by the National Recreation and Park Association/American Association for Leisure and Recreation Council on Accreditation, and the Bachelor in Social Work program is accredited by the Council on Social Work Education (CSWE). The Master in Social Work program is currently in candidacy for accreditation by the CSWE. Full accreditation is anticipated in 2003. See the "Academic Accreditation at ASU West," page 684.

ACADEMIC ORGANIZATION AND ADMINISTRATION

The provost provides executive leadership for the continuing development and management of the campus and reports to the executive vice president and provost of ASU. The provost is aided in the administration of the campus by vice provosts, deans, directors, department chairs, faculty, and other officers. There are four schools and colleges at ASU West administered by deans. These academic units

ASU West Baccalaureate Degrees and Majors

Major	Degree	Concentration	Administered By
Accountancy	B.S.	—	Department of Accounting and Information Systems Management
Administration of Justice	B.S.	—	Department of Administration of Justice
American Studies	B.A.	—	Department of American Studies
Applied Science	B.A.S.	All minors available at ASU West, individualized concentration	Division of Collaborative Programs
Communication Studies	B.A., B.S.	—	Department of Communication Studies
Elementary Education	B.A.E.	Bilingual education/English as a second language, early childhood education	Department of Elementary Education
English	B.A.	—	Department of American Studies
Global Business	B.S.	Financial management, human resources management, information systems management, international studies, marketing	School of Management
History	B.A.	—	Department of American Studies
Integrative Studies	B.A.	All minors available at ASU West, individualized concentration	Department of Integrative Studies
Interdisciplinary Arts and Performance	B.A.	Media, music, performance studies, theater/performance, visual art	Department of Interdisciplinary Arts and Performance
Life Sciences	B.S.	—	Department of Life Sciences
Nursing	B.S.N.	—	College of Nursing (ASU Main)
Political Science	B.A., B.S.	—	Department of Social and Behavioral Sciences
Psychology	B.A., B.S.	—	Department of Social and Behavioral Sciences
Recreation and Tourism Management	B.S.	—	Department of Recreation and Tourism Management
Secondary Education	B.A.E.	Academic specializations: English, history, mathematics, social studies	Department of Secondary Education
Social and Behavioral Sciences	B.A., B.S.	—	Department of Social and Behavioral Sciences
Social Work	B.S.W.	—	Department of Social Work
Sociology	B.A., B.S.	—	Department of Social and Behavioral Sciences
Spanish	B.A.	—	Department of American Studies
Special Education	B.A.E.	—	Department of Special Education
Women's Studies	B.A., B.S.	—	Women's Studies Program

develop and implement the teaching, research, and service programs of the institution, aided by the ASU West Library and other services.

The faculty and students of the institution play an important role in campus governance, with the Academic Senate, Associated Students of ASU West, and numerous cross-campus and joint ASU West–ASU Main–ASU East committees serving the needs of a rapidly growing institution.

See "ASU West Faculty and Academic Professionals," page 664, and "ASU West Administrative Personnel," page 670.

ADMISSION

Nondegree Students

Nondegree students may take courses at ASU West according to the special provisions under "Admission of Undergraduate Nondegree Applicants," page 65.

Degree-Seeking Students

Any student admitted to ASU may take courses at ASU West. To be admitted to an ASU West degree program, the student must meet university admissions requirements and

ASU West Graduate Degrees and Majors

Major	Degree	Concentration	Administered By
Business Administration	M.B.A	—	School of Management
Communication Studies	M.A.	—	Department of Communication Studies
Criminal Justice	M.A.	—	Department of Administration of Justice
Educational Administration and Supervision	M.Ed.	—	Department of Graduate Studies and Professional Development
Elementary Education	M.Ed.	Bilingual education, educational technology, ESL education, reading	Department of Graduate Studies and Professional Development
Interdisciplinary Studies	M.A.	—	College of Arts and Sciences
Secondary Education	M.Ed.	Educational technology	Department of Graduate Studies and Professional Development
Social Work	M.S.W.	Advanced generalist practice	Department of Social Work
Special Education	M.Ed.	Infants and young children	Department of Graduate Studies and Professional Development

the specific admission requirements of the ASU West program. A student who is admitted to an ASU West degree program is defined as an ASU West student.

For more information on applying to ASU West degree programs, see the current *ASU West Catalog* or *ASU West Schedule of Classes*. For applications and admission information, call 602/543-8203, or write

ADMISSION SERVICES
UNIVERSITY CENTER BUILDING 120
ARIZONA STATE UNIVERSITY WEST
PO BOX 37100
PHOENIX AZ 85069-7100

Change of Major from ASU Main to ASU West

Currently enrolled ASU Main degree-seeking students who want to relocate to an ASU West degree program should contact the Graduate Studies Office at ASU West for the appropriate procedures. Acceptance to an ASU West degree program requires the student to meet the prerequisites for entry to the student's choice of major as stated in the appropriate catalog. Students should be aware that requirements may differ between ASU West and ASU Main for the same major.

Application of Course Credit. The application of transfer course credit to the degree program is determined by the department of the student's major. Because of these constraints, students should seek advice from the appropriate advisor for their major before registering for classes at another university or ASU campus.

ACADEMIC ADVISING

Effective academic advising is an essential aspect of the educational experience at ASU West. Prospective students should contact a general advisor as a first step in the admission process to make an appointment, call 602/543-WCAC, or visit the West Campus Advising Center in UCB 201. A general counselor reviews admission requirements and processes and makes referrals to academic advisors as appropriate. A convenient alternative is to meet with an outreach advisor at an ASU West Transfer Center located on the campuses of local community colleges.

DEGREE PROGRAMS

Refer to the "ASU West Baccalaureate Degrees and Majors" table, page 657, and the "ASU West Graduate Degrees and Majors" table, on this page.

The College of Education offers postbaccalaureate programs for teacher certification in elementary education and secondary education. Students who complete the approved program, including student teaching, are recommended for certification to the Arizona Department of Education.

For more information on ASU West degree requirements, see the *ASU West Catalog* in print or on the Web at www.west.asu.edu/acadaffairs/catalog.

Minors and Certificates

ASU West offers an extensive selection of minors and certificate programs that may be taken in conjunction with a major. Other certificate programs may be taken independently. See the "ASU West Minors" table, page 659, and the "ASU West Certificates" table, page 660. For more information, refer to the individual department or college descriptions in the *ASU West Catalog*.

ASU Main Programs Hosted at ASU West

Courses for the Bachelor of Science in Nursing (B.S.N.) degree are offered at ASU West. For specific information on requirements, see "College of Nursing," page 444.

Course Information

For information on ASU West course offerings, see the current ASU West *Schedule of Classes*. For ASU West course descriptions and General Studies courses offered at ASU West, see the *ASU West Catalog* or www.west.asu.edu/acadaffairs/catalog.

LIBRARY SERVICES

The ASU West Library provides resources that support the curricula of ASU West with a collection of 315,000 volumes, 1.4 million microforms, 7,500 videos, 15,000 slides, 277 electronic databases, and nearly 6,000 serial titles

ASU West Minors

Minor	Administered By
American Studies	Department of American Studies
Communication Studies	Department of Communication Studies
English	Department of American Studies
Ethnic Studies	College of Arts and Sciences
Film and Video Studies	Department of Interdisciplinary Arts and Performance
Gerontology	Gerontology Program
History	Department of American Studies
Interdisciplinary Arts and Performance	Department of Interdisciplinary Arts and Performance
Life Sciences	Department of Life Sciences
Mathematics	Department of Integrative Studies
Philosophy	Department of Integrative Studies
Political Science	Department of Social and Behavioral Sciences
Prelaw	College of Human Services
Psychology	Department of Social and Behavioral Sciences
Public Relations and Strategic Communications	Department of Communication Studies
Religious Studies	College of Arts and Sciences
Social and Behavioral Sciences	Department of Social and Behavioral Sciences
Sociocultural Anthropology	Department of Social and Behavioral Sciences
Sociology	Department of Social and Behavioral Sciences
Spanish	Department of American Studies
Special Events Management	Department of Recreation and Tourism Management
Tourism Management	Department of Recreation and Tourism Management
Women's Studies	Women's Studies Program

including more than 4,000 electronic full-text journals. Approximately 47 percent of electronic databases are available to ASU registered users from home computers.

A wide range of information and research tools—most accessible from off-campus—are available through the ASU West Library Web site at www.west.asu.edu/library. Knowledgeable staff members are available to provide reference service and instruction in the use of the library's considerable resources. Individual consultations with subject specialist librarians are available by appointment. The Library Instruction Program provides introduction to the tools and resources available for research in academic disciplines, including Internet resources.

For library hours and information, call 602/543-8501.

STUDENT AFFAIRS

Student Affairs is responsible for the delivery of a variety of services and developmental programs to a diverse student population. These services support both the administrative needs and educational pursuits of students and include

1. admissions information and services;
2. career services and personal counseling;
3. disability support services;
4. financial aid;
5. testing services;
6. mulitcultural student services;
7. recruitment and outreach;
8. registration services;
9. student employment;
10. student health services;
11. student life; and
12. veterans services.

For more information, visit the University Center Building, the Web site at www.west.asu.edu/sa, call 602/543-8203, or write

STUDENT AFFAIRS
ARIZONA STATE UNIVERSITY WEST
PO BOX 37100
PHOENIX AZ 85069-7100

STUDENT HOUSING

A new 400-bed student housing facility is scheduled to open at ASU West in August 2003. The project features two three-story buildings of apartment-style residential units with full kitchens, laundry facilities, a community hall with multipurpose rooms and a computer lab, a swimming pool, and convenient parking. Amenities will include tutoring services, academic advising, in-room Internet access, coordinated educational and social activities, and dining services close to campus. The expense to residents will be competitive with the rental costs of nearby apartment complexes. For more information, call 602/543-CASA.

ASU EXTENDED CAMPUS

The College of Extended Education was created in 1990 to extend the resources of ASU throughout Maricopa County, the state, and beyond. The College of Extended Education is a university-wide college that oversees the ASU Extended Campus and forms partnerships with other ASU colleges, including those at ASU West, to meet the

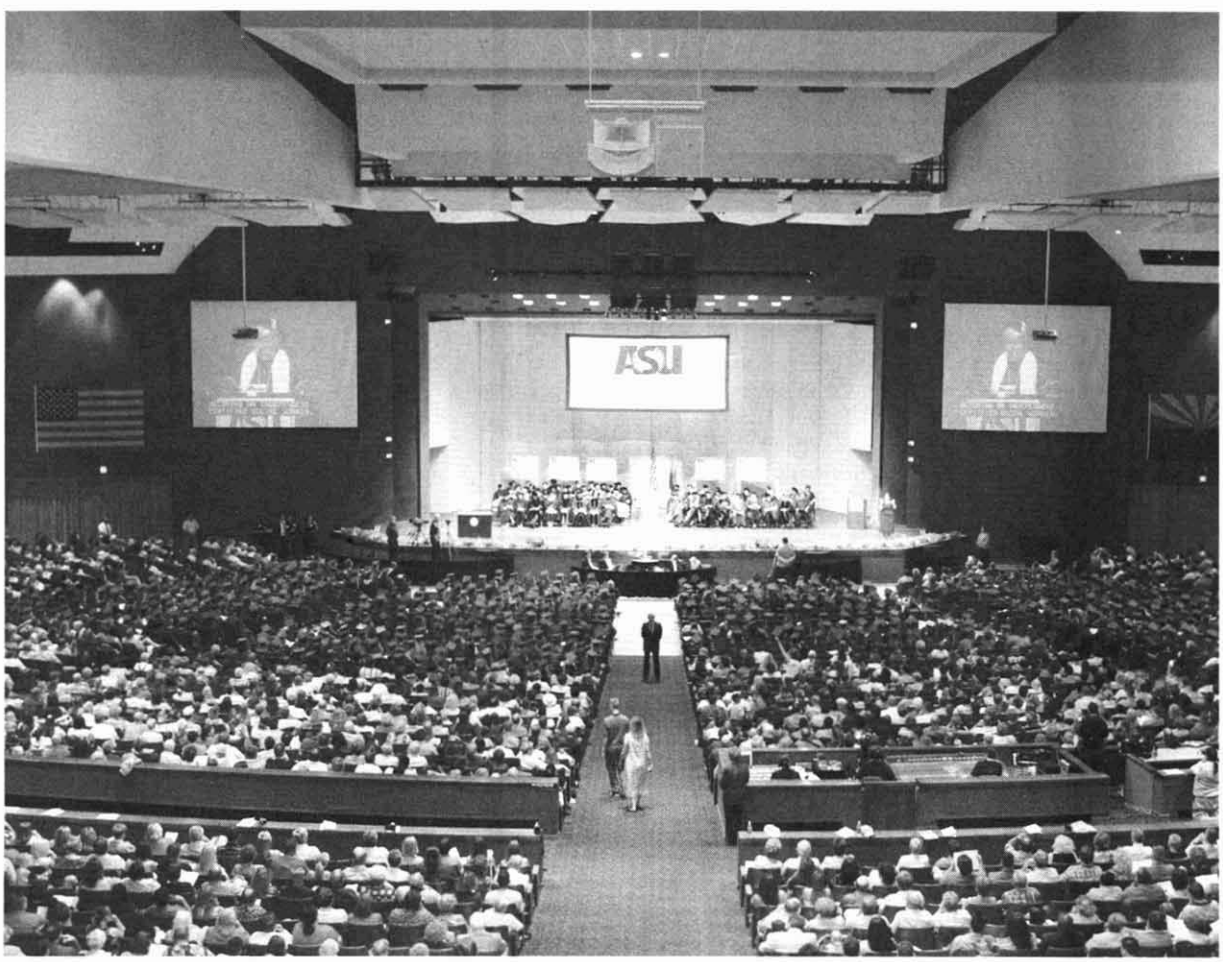
ASU West Certificates

Certificate	Administered By
Accountancy, Postbaccalaureate Certificate in	Department of Accounting and Information Systems Management
Communication and Human Relations, Postbaccalaureate Certificate in	Department of Communication Studies
Ethnic Studies, Certificate in	College of Arts and Sciences
Film and Video Studies, Certificate in	Department of Interdisciplinary Arts and Performance
Gerontology, Certificate in	College of Human Services
Professional Accountancy, Postbaccalaureate Certificate in	Department of Accounting and Information Systems Management
Women's Studies, Certificate in	Women's Studies Program
Writing, Certificate in	Department of American Studies

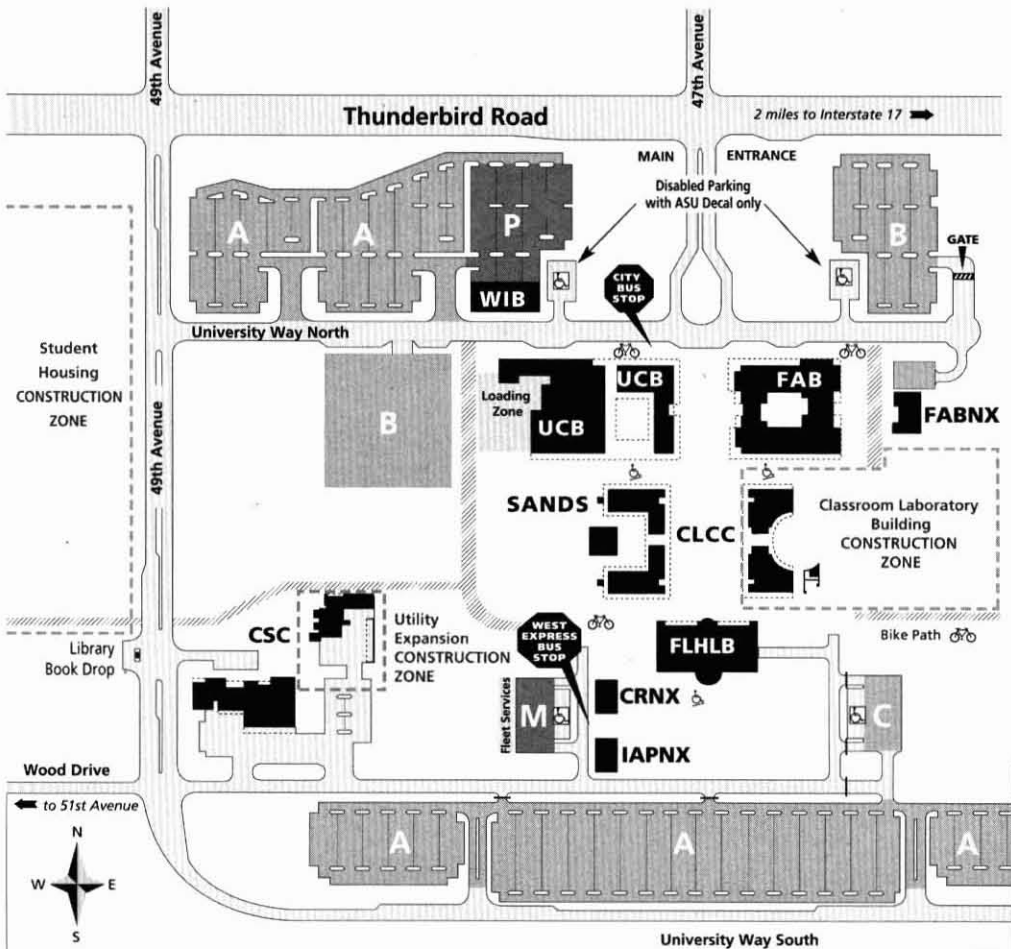
instructional and informational needs of a diverse community.

The ASU Extended Campus goes beyond the boundaries of the university's three physical campuses to provide access to quality academic credit and degree programs for working adults through flexible schedules; a vast network of off-campus sites; classes scheduled days, evenings, and weekends; and innovative delivery technologies including television, the Internet, and independent learning. The Extended Campus also offers a variety of professional continuing education and community outreach programs.

For more information, see "ASU Extended Campus," page 671, or access the Web site at www.asu.edu/xed.



The ASU West spring 2002 graduation ceremony took place in the Sundome Center for the Performing Arts. Tim Trumble photo



BUILDING LEGEND

Welcome & Information Building (WIB)
- Campus Information Center
- Parking Services Office
- Arizona State Savings & Credit Union

University Center Building (UCB)
- Admission Services
- Bank of America ATM
- Bookstore
- Cafeteria
- Career Services/Personal Counseling Center
- Cashier's Office
- Child Care Center
- Disability Resource Center
- Division of Collaborative Programs
- Financial Aid/Student Employment
- Information Desk
- La Sala A,B,C
- Multicultural Student Services
- Registration Services
- Second Stage West Theatre
- Student Affairs Administration
- Student Health Services
- Student Life
- Student Support Services Program
- University-College Center
- Veteran Student Services
- Wellness/Fitness Center
- West Campus Advising Center
- Women's Studies Resource Center

Sands Classroom Building (SANDS)
- Copy Express
- Kiva Lecture Hall
- Sand Trap snack bar

Faculty/Administration Building (FAB)
- Academic Affairs
- Academic/Faculty Offices
- Basement classrooms
- College of Arts & Sciences
- College of Education
- College of Human Services
- Copy Center
- Information Technology
- Instructional Technology Lab
- Information Desk
- Institutional Advancement
- Office of the Provost
- School of Management

FAB Annex (FABNX)
- Office of the Executive Vice Provost
- Human Resources

Fletcher Library (FLHLB)
- Technopolis
- Learning Enhancement Center

Interdisciplinary Arts Annex (IAPNX)

Classroom Annex (CRNX)

Central Services Complex (CSC)
- DPS/University Police
- Mail Services
- Facilities Development & Management
- Central Plant

Classroom Lab/Computer Classroom Building (CLCC)

Joan De Arc Avenue
to 43rd Avenue

SYMBOLS LEGEND

- Disabled Decal Parking
- A — Decal Parking *(Students, faculty & staff only)*
- M — Metered Parking *(25¢ per 15 minutes)*
- B — Faculty/Staff Decal Parking *(7 a.m. to 5:30 p.m.; Student decal parking allowed after 5:30 p.m)*
- P — Visitor Parking *($1.00 exit fee; 24 hours)*
- C — Faculty/Staff Decal Parking *(24 hours/day)*
- Accessible Ramp
- Bicycle Racks

Parking regulations are enforced at all times. Decals are required on campus from 7am through 11pm. Meters are enforced from 7am until 10pm.

ASU Arizona State University West

(602) 543–5500 • www.west.asu.edu
Street Address: 4701 West Thunderbird Road • Glendale, AZ 85308-4908
Mailing address: PO Box 37100, Phoenix, AZ 85069-7100

ASU West Directory

For the "ASU Main Directory," see page 505. For the "ASU East Directory," see page 650. For the "ASU Extended Campus Directory," see page 681.

Organization	Location	Telephone	Web Address
Academic Affairs	FAB N301	602/543-4500	www.west.asu.edu/acadaffairs
Admission Services	UCB 120	602/543-8203	www.west.asu.edu/admissions
Arts and Sciences, College of	FAB N201	602/543-6000	www.west.asu.edu/coas
American Studies, Department of	FAB N220C	602/543-6090	www.west.asu.edu/amerstud
Ethnic Studies Program	FAB N204	602/543-6007	www.west.asu.edu/ethnic
Integrative Studies, Department of	FAB N279-1	602/543-6003	www.west.asu.edu/iasweb
Interdisciplinary Arts and Performance, Department of	FAB N230F	602/543-6057	www.west.asu.edu/iap
Life Sciences, Department of	CLCC 210	602/543-6050	www.west.asu.edu/lifesci
M.A. Interdisciplinary Studies	FABN 201F	602/543-6241	www.west.asu.edu/mais
Social and Behavioral Sciences, Department of	FAB N250	602/543-6058	www.west.asu.edu/social
Women's Studies Program	FAB N291	602/543-3300	www.west.asu.edu/wsteam
Associated Students of ASU West	UCB 226	602/543-8186	www.west.asu.edu/asasuw
ASU West	—	602/543-5500	www.west.asu.edu
Barrett Honors College	UCB 201	602/543-4503	www.asu.edu/honors
Bookstore	UCB 140	602/543-6800	www.west.asu.edu/adaff/auxs/bookstore
Career Services and Personal Counseling Center	UCB 320	602/543-8124	www.west.asu.edu/cspc
Collaborative Programs, Division of	UCB 201	602/543-4600	www.west.asu.edu/dcp
Bachelor of Applied Science Program	FAB N206	602/543-4BAS	www.west.asu.edu/bas
University-College Center	UCB 201	602/543-4222	www.west.asu.edu/ucc
West Campus Advising Center	UCB 201	602/543-WCAC	www.west.asu.edu/wcac
Disability Resource Center	UCB 130	602/543-8145	www.west.asu.edu/drc
TDD	—	602/543-4327	—
Education, College of	FAB S210A	602/543-6300	www.west.asu.edu/coe
Elementary Education, Department of	FAB S218	602/543-6315	www.west.asu.edu/coe
Graduate Studies and Professional Development, Department of	FAB S220	602/543-3634	www.west.asu.edu/coe/graduate
Secondary Education, Department of	FAB S251A	602/543-6445	www.west.asu.edu/coe
Special Education, Department of	FAB S252	602/543-6380	www.west.asu.edu/coe
Financial Aid Services	UCB 120	602/543-8178	www.west.asu.edu/financialaid
First-Year Advising Center	UCB 105	602/543-WCAC	www.west.asu.edu/wcac
Graduate Studies	FAB S 301	602/543-4567	www.west.asu.edu/graduate
Human Services, College of	FAB S105-A	602/543-6600	www.west.asu.edu/chs
Administration of Justice, Department of	FAB S270C-1	602/543-6607	www.west.asu.edu/chs/aoj
Communication Studies, Department of	FAB S141C	602/543-6606	www.west.asu.edu/chs/comm
Gerontology Program	FAB S121	602/543-6603	www.west.asu.edu/chs/GRN
Nursing (ASU Main Program)	FAB N290A-2	602/543-6605	nursing.asu.edu
Recreation and Tourism Management, Department of	FAB S115A	602/543-6603	www.west.asu.edu/chs/RTM
Social Work, Department of	FAB S149	602/543-6602	www.west.asu.edu/chs/sw
Information Desk	FAB Lobby	602/543-5500	www.west.asu.edu/adaff/auxs/info
Learning Enhancement Center	FLHLB LL2	602/543-6151	www.west.asu.edu/lec
Library	FLHLB	602/543-8501	www.west.asu.edu/library

Organization	Location	Telephone	Web Address
Management, School of	FAB N101	602/543-6200	www.west.asu.edu/som
Accounting and Information Systems Management, Department of	FAB S190-1	602/543-6275	www.west.asu.edu/som/acct
Economics, Finance, Marketing and Quantitative Business Analysis, Department of	FAB N120-A	602/543-6101	www.west.asu.edu/som
Management, Department of	FAB N120-D	602/543-6204	www.west.asu.edu/som
Master of Business Administration (MBA) Program	FAB N151	602/543-6201	www.west.asu.edu/som/MBA
Multicultural Student Services	UCB 220	602/543-8148	www.west.asu.edu/multicultural
Native American Support Services Programs	UCB 201	602/543-8138	www.west.asu.edu/nativeamerican
Parking Services (Decals, Appeals)	WIB 101	602/543-7275	www.west.asu.edu/adaff/auxs/parking
Provost, Office of the	FAB N303	602/543-7000	—
Recruitment and Outreach	UCB 201	602/543-8143	www.west.asu.edu/recruitment
Research Consulting Center	UCB 201	602/543-3410	www.west.asu.edu/rcc
Residency Classification	UCB 120	602/543-8203	www.west.asu.edu/admissions
Student Employment	UCB 120	602/543-8178	www.west.asu.edu/financialaid
Student Health Services	UCB 170	602/543-8019	www.west.asu.edu/studenthealth
Student Life	UCB 220	602/543-8200	www.west.asu.edu/studentlife
Student Support Services Program (TRiO)	UCB 220	602/543-8121	www.west.asu.edu/trio
Testing Services	WIB 102	602/543-8136	www.west.asu.edu/testing
Veteran Student Services	UCB 120	602/543-8220	www.west.asu.edu/veteran/vetinfo.htm
West Campus Advising Center	UCB 201	602/543-WCAC	www.west.asu.edu/wcac
Women's Studies Resource Center	UCB 323	602/543-3421	www.west.asu.edu/wsteam/resource.htm

ASU West Faculty and Academic Professionals

A

Achilles, Elayne R. (1986), Associate Professor of Education; B.M.Ed., Temple University; M.M., Ed.D., Arizona State University

Ackroyd, William S. (2000), Lecturer of Social and Behavioral Sciences; B.A., M.A., M.S., Portland State University; Ph.D., University of Arizona

Aleshire, Peter (1993), Senior Lecturer of Professional Writing; B.A., M.A., Stanford University

Allgood, Tammy (2002), Assistant Librarian; B.A., University of Arizona; M.S., University of North Carolina

Amobi, Olufunmilanyo A. (2001), Assistant Professor of Secondary Education; B.A., University of Ibadan (Nigeria); M.Ed., Ed.D., Arizona State University

Anastasi, Jeffery S. (2001), Assistant Professor of Cognitive Psychology; B.A., M.A., Ph.D., State University of New York, Binghamton

Andereck, Kathleen L. (1993), Associate Professor of Recreation and Tourism Management; B.S., University of Wisconsin, Stevens Point; M.S., Texas A&M University; Ph.D., Clemson University

Anders, Gary C. (1989), Professor of Economics; Director, Institute for International Business, School of Management; B.S., West Texas State University; M.A., Ph.D., University of Notre Dame

Anderson, Laurel A. (1989), Associate Professor of Marketing; B.S.N., University of Minnesota, Twin Cities; M.N., University of Washington; Ph.D., Arizona State University

Anokye, A. Duku (1999), Associate Professor of American Studies; Cochair, Department of American Studies; B.A., Michigan State University; M.A., Federal City College, District of Columbia; M.A., Ph.D., City University of New York Graduate School and University Center

Armstrong, Gaylene S. (2000), Assistant Professor of Administration of Justice; B.A., University of Manitoba (Canada); M.A., Ph.D., University of Maryland

Armstrong, Todd A. (1999), Assistant Professor of Administration of Justice; B.A., M.A., Ph.D., University of Maryland, College Park

Atwater, Leanne E. (1993), Professor of Management; Chair, Department of Management; B.A., M.A., San Diego State University; Ph.D., Claremont Graduate School

Ávalos, Manuel (1990), Associate Professor of Political Science; Associate Vice Provost, Research and Faculty Development; B.A., M.A., University of Arizona; Ph.D., University of New Mexico

Awender, Michael A. (2000), Professor of Education; Dean, College of Education; B.A., M.A., University of Windsor (Canada); M.Ed., University of Toronto (Canada); Ph.D., Claremont Graduate School

B

Baldwin, Bruce A. (1989), Professor of Accountancy; B.A., M.B.A., Michigan State University; Ph.D., Arizona State University

Balthazard, Pierre (1999), Associate Professor of Information Systems Management; B.S., McGill University (Canada); M.S., Ph.D., University of Arizona

Beckett, E. Carol (1996), Assistant Professor of Bilingual Education; B.A., M.Ed., Ed.D., Arizona State University

Bellizzi, Joseph A. (1988), Professor of Marketing; Chair, Department of Economics, Finance, Marketing and Quantitative Business Analysis; B.S., M.A., Ph.D., University of Nebraska, Lincoln

Bernat, Frances P. (1993), Associate Professor of Administration of Justice; B.S., M.A., J.D., State University of New York, Buffalo; Ph.D., Washington State University

Brawley, E. Allan (1992), Professor Emeritus of Human Services; Certificate of Social Work, University of Strathclyde (United Kingdom); D.S.W., University of Pennsylvania

Bredbenner, Candice D. (1990), Associate Professor of American Studies; Associate Dean, College of Arts and Sciences; B.A., Russell Sage College; M.A., Ph.D., University of Virginia

Brett, Joan F. (1999), Associate Professor of Management; B.A., B.S., Ohio State University; Ph.D., New York University

Bristol, Terry (2000), Assistant Professor of Marketing; B.S., M.S., San Diego State University; Ph.D., Virginia Polytechnic Institute

Britt, Chester L. III (1999), Associate Professor of Administration of Justice; B.S., University of Iowa; M.A., Washington State University; Ph.D., University of Arizona

Broaddus, Dorothy C. (1990), Associate Professor of English; B.A., Eastern Kentucky University; M.Ed., Ph.D., University of Louisville

Brown, Lee H. (2001), Assistant Professor of Secondary Education; B.A., Union College; M.A., Ed.D., State University of New York, Albany

Buenker, Joe (2000), Assistant Librarian; B.A., University of Wisconsin, Parkside; M.S., University of Illinois, Urbana

Burleson, Mary H. (1997), Assistant Professor of Psychology; B.A., M.S., New Mexico State University; Ph.D., Arizona State University

Buscher, Dick (2002), Lecturer of Elementary Education; B.S., M.S., Eastern Illinois University; Ed.D., Arizona State University

Bushfield, Suzanne Y. (2002), Assistant Professor of Social Work; B.M., Southern Methodist University; M.S.W., University of Southern Mississippi; Ph.D., University of Idaho

Buss, Ray R. (1990), Associate Professor of Educational Psychology; Assistant Dean, College of Education; B.S., M.S., Ph.D., University of Wisconsin, Madison

C

Cabrera, Luis (2002), Assistant Professor of Political Theory; B.A., Western Washington University; M.F.A., Eastern Washington University; Ph.D., University of Washington

Cardelle-Elawar, Maria (1987), Professor of Educational Psychology; B.A., Universidad Experimental Libertador (Venezuela); M.S., University of Southern California; Ph.D., Stanford University

Cárdenas, Lupe (1986), Associate Professor of Spanish; B.A., M.A., Ph.D., Arizona State University

Carey, Jane M. (1988), Associate Professor of Information Systems Management; B.S., M.B.A., Eastern Illinois University; Ph.D., University of Mississippi

Carter, Wendy (1997), Assistant Professor of Sociology; B.A., Stanford University; M.S., Carnegie Mellon University; M.S., Ph.D., University of Wisconsin, Madison

Champion, Kelly M. (2001), Assistant Professor of Psychology; A.B., University of Michigan, Ann Arbor; M.S., Eastern Michigan University; Ph.D., University of Kansas

Chang, Stanley Y. (1992), Associate Professor of Accountancy; B.B.A., National Taiwan University (Taiwan); M.A., University of Missouri; Ph.D., Texas Tech University

Chavez, José G. (2000), Assistant Professor of Spanish; B.A., M.A., California State University, Sacramento; Ph.D., Arizona State University

Cheek, Jane (2002), Lecturer of Elementary Education; B.A.E., M.Ed., Arizona State University West

Chisholm, Inés M. (1991), Associate Professor of Bilingual Education; B.A., M.Ed., University of Puerto Rico; Ph.D., University of Florida

Christie, Alice A. (1995), Associate Professor of Technology and Education; B.A., Denison University; M.Ed., Boston University; Ph.D., Arizona State University

Cleland, Jo Ann V. (1991), Professor Emerita of Education; B.A., Saint Olaf College; M.A., Ed.D., Northern Arizona University

Collins-Chobanian, Shari C. (1994), Associate Professor of Philosophy; Director, Ethnic Studies Program; B.A., Colorado State University; M.A., Ph.D., Washington University

Corley, Ted L. (2001), Lecturer in Mathematics; B.S., Grand Canyon University; M.A., Ed.D., Arizona State University

Costantino, James (1998), Lecturer of Accountancy; B.S., M.Acc., Arizona State University; M.A., University of Southern California

Cuádraz, Gloria H. (1994), Associate Professor of American Studies; B.A., University of California, Santa Cruz; M.A., Ph.D., University of California, Berkeley

Cutrer, Emily F. (1990), Professor of American Studies; Dean, College of Arts and Sciences; B.A., M.A., Ph.D., University of Texas, Austin

Cutrer, Thomas W. (1992), Associate Professor of American Studies; Cochair, Department of American Studies; B.A., M.A., Louisiana State University; Ph.D., University of Texas, Austin

D

Dallmus, John T. (2000), Lecturer of Accountancy; B.S., Towson University; M.B.A., Loyola College in Maryland

Davidson, Ronald (1997), Associate Professor of Accountancy; B.Comm., University of Manitoba (Canada); M.B.A., York University (Canada); Ph.D., University of Arizona

De La Cruz, Yolanda (1991), Associate Professor of Mathematics Education; B.A., M.A., California State University, Northridge; Ed.D., University of California, Berkeley

Delgado, Fernando (1994), Associate Professor of Communication Studies; Associate Vice Provost, Academic Programs and Graduate Studies; B.A., San Jose State University; M.A., Ph.D., University of Iowa

Dennis, Douglas (2003), Professor of Biology; Chair, Department of Life Sciences; B.A., Adrian College; Ph.D., University of Tennessee

Deutch, Charles (2002), Associate Professor of Molecular Biology; B.A., Reed College; Ph.D., University of California, Riverside

Di Mare, Lesley (1992), Associate Professor of Communication Studies; B.A., California State University, Chico; M.A., California State University, Hayward; Ph.D., Indiana University, Bloomington

Dix, Clarence L. (1979), Senior Lecturer of Social Work; B.A., Buena Vista College; M.S.W., University of Chicago

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E

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Elenes, C. Alejandra (1992), Associate Professor of Women's Studies; Licenciada en Ciencias de la Información, University of Monterrey (Mexico); M.A., Ph.D., University of Wisconsin, Madison

F

Farone, Diane Weis (2001), Assistant Professor of Social Work; B.A., University of Colorado, Boulder; M.B.A., University of Tennessee; M.S., D.S.W., Columbia University; J.D., Vanderbilt University

farrelly, deg (1991), Associate Librarian; B.A., Illinois State University; M.L.S., Rutgers, The State University of New Jersey

Feezor-Buttes, Barbara (1995), Assistant Professor of American Studies; B.A., University of California, Berkeley; M.A., Ph.D., University of California, Los Angeles

Firat, A. Fuat (1990), Professor of Marketing; Licencié en Economie, Istanbul University (Turkey); Ph.D., Northwestern University

Fitzpatrick, Tanya R. (2000), Associate Professor of Social Work; Director, Undergraduate Studies, Department of Social Work; B.A., Clark University; M.S.W., Simmons School of Social Work; Ph.D., Boston College

Flint, G. David (1998), Lecturer of Management; B.A., Grand Canyon University; M.I.M., American Graduate School of International Management; Ph.D., Texas A&M University

Forster, Bruce A. (2000), Professor of Economics; Dean, School of Management; B.A., University of Guelph (Canada); Ph.D., Australian National University (Australia)

Foster, Will (2001), Assistant Professor of Information Systems Management; B.A., Williams College; Ph.D., University of Arizona

G

Gaffney, Cynthia (2001), Instructor of Communication Studies; B.A., M.A., Arizona State University

Gallegos, Bee (1984), Associate Librarian; B.S., University of North Alabama; M.L.S., George Peabody College for Teachers

Gater, Helen (1970), Dean Emerita; B.A., Fort Hays University; M.A., University of Denver

George, Peggy J. (2001), Lecturer of Elementary Education; B.A., Arizona State University; M.Ed., Ed.D., University of Massachusetts, Amherst

Gilkeson, John S. (1991), Associate Professor of History; A.B., Amherst College; M.A., University of Oklahoma; Ph.D., Brown University

Gitelson, Richard (1994), Professor of Recreation and Tourism Management; Director, Gerontology Program; B.A., M.A.T., M.S., University of North Carolina, Chapel Hill; Ph.D., Texas A&M University

Glass, Ronald D. (1996), Associate Professor of Professional Core; B.A., Harvard College; M.A., Ph.D., Stanford University; Ed.M., Harvard University; C.Phil., University of California, Berkeley

Goldman, Alan (2002), Lecturer of Management; B.Ed., University of Miami, Coral Gables; M.A., San Francisco State University; Ph.D., University of Colorado, Boulder

Gonzalez-Jensen, Margaret (1994), Associate Professor of Bilingual Education; B.A., Our Lady of the Lake University; M.A., Ed.D., Texas A&M University

Gonzales, David S. (2002), Associate Professor of Animal Physiology; B.S., Metropolitan State College, Denver; M.S., Ph.D., University of Wisconsin, Madison

Gopalakrishnan, Mohan (1998), Associate Professor of Operations Production Management; B.E., College of Engineering (India); M.S., Ph.D., University of Alabama, Tuscaloosa

Gordon, Aubrie (2002), Instructor of Social Work; B.A., M.A., M.S.W., Ph.D., Western Michigan University

Graves, Joseph L (1994), Professor of Evolutionary Biology; A.B., Oberlin College; Ph.D., Wayne State University

Greenhut, John G. (1989), Associate Professor of Finance; B.A., Ph.D., Texas A&M University

Greenstein, Marilyn (2000), Associate Professor of Accountancy; B.B.A., University of Houston; Ph.D., Temple University

Griffin, Marie (1997), Assistant Professor of Administration of Justice; B.S., Santa Clara University; Ph.D., Arizona State University

Gruber, Diane (1995), Lecturer of Communication Studies; B.A., Rutgers, The State University of New Jersey; M.A., Ph.D., Purdue University

Gutierres, Sara E. (1990), Associate Professor of Psychology; B.S., M.A., Ph.D., Arizona State University

H

Haarr, Robin N. (1994), Associate Professor of Administration of Justice; B.S., State University of New York, Brockport; M.S., Ph.D., Michigan State University

Haas, Nancy S. (1986), Associate Professor of Curriculum and Instruction; Chair, Department of Secondary Education; B.A., M.Ed., Ph.D., Arizona State University

Haladyna, Thomas M. (1986), Professor of Educational Psychology; B.S., Illinois State University; M.A., San Jose State University; Ph.D., Arizona State University

Hansen, Cory C. (2001), Assistant Professor of Reading/Language Arts; B.Ed., University of Calgary (Canada); M.Ed., Ph.D., Arizona State University

Harken, Henry R. Jr. (1986), Associate Librarian; B.A., Hofstra University; M.S.L.S., Long Island University

Harris, Kathleen C. (1990), Professor of Special Education; B.A., M.Ed., Rutgers, The State University of New Jersey; Ph.D., Temple University

Hattenhauer, Darryl (1988), Associate Professor of American Literature; B.A., M.A., California State University; Ph.D., University of Minnesota, Twin Cities

Hay, Victoria (1993), Senior Lecturer of Writing; B.A., University of Arizona; M.A., Ph.D., Arizona State University

Hayden, Mary (1998), Lecturer of Management; B.A., M.P.A., D.P.A., Arizona State University

Hess, Robert K. (1990), Associate Professor of Measurement and Evaluation; B.A., M.Ed., University of Georgia; Ph.D., University of South Carolina

Hewitt, Kim A. (2002), Visiting Assistant Professor of Integrative Studies; B.A., University of Maryland; M.A., Ph.D., University of Texas, Austin

Hultsman, John T. (1990), Professor of Recreation and Tourism Management; Interim Dean, College of Human Services; B.G.S., University of Kansas; M.S., University of Missouri; Re.D., Indiana University, Bloomington

Hultsman, Wendy (1990), Associate Professor of Recreation and Tourism Management; Chair, Department of Recreation and Tourism Management; B.S.E., State University of New York, Cortland; M.S., Indiana University, Bloomington; Ph.D., Pennsylvania State University

Hurwitz, Sally (2001), Lecturer; B.A.E., M.Ed., Ph.D., Arizona State University

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Inman, Thomas E. (2002), Lecturer of Mathematics; B.A.E., M.A.E., Arizona State University

Irvin, Glenn W. (1997), Professor of English; B.A., M.A., Ph.D., Arizona State University

Irwin, Leslie (1995), Associate Professor of Professional Education Core; B.S., University of Wisconsin, Superior; B.Ed., M.Ed., University of Ottawa (Canada); Ed.D., Brigham Young University

Isbell, Dennis (1991), Associate Librarian; B.S., M.A., Northern Arizona University; M.L.S., University of Arizona

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K

Kammerlocher, Lisa (1988), Associate Librarian; B.S., M.L.S., University of Oklahoma

Kassing, Jeffrey W. (1998), Assistant Professor of Communication Studies; Director of Graduate Studies, Department of Communication Studies; B.A., William Jewell College; M.A., Murray State University; Ph.D., Kent State University

Katz, Charles (1997), Assistant Professor of Administration of Justice; Director of Graduate Studies, Department of Administration of Justice; B.S., Truman State University; M.A., Ph.D., University of Nebraska, Omaha

Keil, Thomas J. (1999), Professor of Sociology; B.A., King's College; M.A., Ph.D., Temple University

Kelley, Douglas L. (1994), Associate Professor of Communication Studies; B.A., Westmont College; M.C., Arizona State University; Ph.D., University of Arizona

Kelley, Michael F. (1990), Associate Professor of Early Childhood Education; Chair, Department of Elementary Education; B.S., M.S., Arizona State University; Ed.D., University of Georgia

Kennedy, Jeffery T. (2000), Fine Arts Specialist; Associate Artistic Director; B.A., California State University, Fullerton; M.A., New York University

Kirby, Andrew (1995), Professor of Social and Behavioral Sciences and Geography; Director, M.A. in Interdisciplinary Studies Program; B.A., Ph.D., University of Newcastle (United Kingdom)

Knopf, Richard C. (1986), Professor of Recreation and Tourism Management; Interim Director, Partnership for Community Development; B.S., M.S., Ph.D., University of Michigan

Koptiuch, Kristin (1992), Associate Professor of Anthropology; B.A., State University of New York, Binghamton; M.A., Ph.D., University of Texas, Austin

L

Lash, Christine (1999), Academic Professional; Coordinator, Women's Studies Resource Center; B.S., M.C., Ph.D., Arizona State University

Lavitt, Melissa R. (1991), Associate Professor of Social Work; Chair, Department of Social Work; Director, Graduate Studies, Department of Social Work; B.A., University of Chicago; M.S.W., Ph.D., Tulane University

Lentz, Daniel (1991), Associate Professor of Music Theory and Composition; B.A., Saint Vincent College; M.F.A., Ohio University, Athens

Lerman, Richard (1995), Professor of Media Arts; B.A., M.F.A., Brandeis University

Lowe, D. Jordan (2003), Associate Professor of Accountancy; B.S., M.Acc., Brigham Young University; Ph.D., Arizona State University

Luken, Paul C. (1993), Senior Lecturer of Sociology; B.A., Quincy College; M.A., Ph.D., Ohio State University

M

Maimon, Elaine P. (1996), Professor of English; Provost, ASU West; Vice President, ASU; B.A., M.A., Ph.D., University of Pennsylvania

Malian, Ida M. (1990), Professor of Special Education; Chair, Department of Special Education; B.A., Oakland University; M.A., Ph.D., University of Michigan

McCabe, James (2000), Assistant Professor of Social Work; B.A., St. Ambrose College; M.P.H., M.S.W., University of Hawaii; D.S.W., University of California, Berkeley

McGovern, Thomas V. (1990), Professor of Psychology; A.B., Fordham University; M.A., Ph.D., Southern Illinois University, Carbondale

McKennon, Edward (2000), Assistant Librarian; B.A., Rutgers University; M.A., University of Arizona

Medville, Karen K. (1995), Assistant Research Scientist in Life Sciences; B.A., Colorado College; M.S., Colorado State University

Mengesha, Astair G. M. (1991), Associate Professor of Women's Studies; Chair, Women's Studies Program; B.A., Purdue University; M.A., Michigan State University; Ph.D., Iowa State University

Mesquita, Luiz F. (2003), Assistant Professor of Management; B.Sc., University of Sao Paulo (Brazil); M.Sc., Ph.D., Purdue University

Meznar, Martin (1994), Associate Professor of International Business; B.A., B.S., Bryan College; M.S., University of Texas, Dallas; Ph.D., University of South Carolina

Midobuche, Eva (1996), Associate Professor of Bilingual Education; B.S., M.A., Ed.D., Texas A&M University

Miller, Paul A. (1988), Associate Professor of Psychology; Chair, Department of Social and Behavioral Sciences; B.S., Saint Vincent College; M.S., North Carolina State University, Raleigh; M.A., Ph.D., University of Texas, Austin

Mizzi, Philip J. (1988), Associate Professor of Quantitative Business Analysis; B.A., Rockford College; Ph.D., Texas A&M University

Mohan, Srimathy (1999), Assistant Professor of Operations Management; B.S., M.S., University of Alabama, Tuscaloosa; M.S., Massachusetts Institute of Technology; Ph.D., University of Montreal (Canada)

Montaño, Henry (2000), Instructor of Social Work; B.A., California State University, Northridge; M.S.W., University of California, Los Angeles

Moore, David W. (1989), Professor of Reading; B.A., M.Ed., University of Arizona; Ph.D., University of Georgia

Morris, Richard (1999), Professor of Communication Studies; B.A., San Jose State University; M.A., Ph.D., University of Wisconsin, Madison

Moulton, Ian F. (1995), Associate Professor of British Literature; B.A., University of Manitoba, Winnipeg (Canada); M.A., University of Western Ontario (Canada); Ph.D., Columbia University

Mueller, Carol M. (1988), Professor of Sociology; B.A., University of California, Berkeley; M.A., Rutgers, The State University of New Jersey; Ph.D., Cornell University

Muller, Barbara J. (1991), Senior Lecturer of Accountancy; B.S., M.B.A., Arizona State University

Murphy Erfani, Julie A. (1989), Associate Professor of Political Science; B.A., Knox College; M.A., Ph.D., University of Minnesota, Twin Cities

Myers, Marilyn (1987), Librarian; Dean, ASU West Library; B.A., M.A., Kansas State University; M.S., University of Illinois; Ph.D., Purdue University

N

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Nadir, P. Aneesah (1994), Lecturer of Social Work; B.S.W., Adelphi University; M.S.W., Arizona State University

Nahavandi, Afsaneh (1989), Professor of Management; Faculty Director, Division of Collaborative Programs; B.A., University of Denver; M.A., Ph.D., University of Utah

Náñez, José E. Sr. (1988), Professor of Psychology; B.A., M.A., California State University; Ph.D., University of Minnesota, Twin Cities

Nevin, Ann (1988), Professor Emerita of Education; B.A., Westminster College; M.Ed., University of Vermont; Ph.D., University of Minnesota, Twin Cities

Nichols, Mark Heitzler (2001), Lecturer in Elementary Education; B.A., Colorado College; M.A., Princeton Theological Seminary; M.A.P.P., Claremont Graduate School

Noguchi, Emi (2003), Assistant Librarian; B.A., Hendrix College; M.S., University of Illinois, Urbana-Champlaign

Noronha, Gregory M. (1995), Associate Professor of Finance; B.S.E., University of Michigan; M.B.A., Ph.D., Virginia Polytechnic Institute and State University

Nucci, Christine (1998), Assistant Professor of Early Childhood Education; B.A., Hunter College, City University of New York; M.S., Brooklyn College, City University of New York; Ph.D., City University of New York

O

Olander, George A. (2000), Lecturer of Finance; B.S., Xavier University; M.B.A., Pepperdine University; D.B.A., United States International University

Onofrey, Karen A. (2002), Assistant Professor of Reading/ Language Arts; B.S., Westfield State College; M.Ed., American International College; Ph.D., University of Arizona

P

Painter, Suzanne R. (1995), Associate Professor of Educational Administration; B.S., Eastern Oregon State College; M.Ed., Ph.D., University of Oregon

Pambuccian, Victor V. (1994), Associate Professor of Mathematics; Baccalaureat, German Lyceum (Romania); M.S., University of Bucharest (Romania); Ph.D., University of Michigan

Perry, Eleanor A. (1996), Associate Professor of Educational Administration; Chair, Department of Graduate Studies and Professional Development; B.A., Douglas College; M.Ed., Rutgers, The State University of New Jersey; Ph.D., University of Oregon

Persau, Linda (1999), Lecturer of Integrative Studies; B.A., University of California, Davis; M.A., Ottawa University

Pough, F. Harvey (1993), Professor of Integrative Biology; B.A., Amherst College; M.A., Ph.D., University of California, Los Angeles

Pulido, Alberto L. (1993), Associate Professor of American Studies; B.A., University of California, San Diego; M.A., Ph.D., University of Notre Dame

R

Raiser, Tiffany C. (2002), Lecturer of Rhetoric and Composition; B.A., Fu-Jen Catholic University (Taiwan); M.A., Sussex University (United Kingdom); M.Ed., Ph.D., Arizona State University

Ramsey, R. Eric (1994), Associate Professor of Communication Studies; Faculty Director, Barrett Honors College; B.A., Rutgers, The State University of New Jersey; M.A., Ph.D., Purdue University

Reese, Ruth (1988), Assistant Professor of Elementary Education; B.S., University of Wisconsin, Madison; M.S., Ph.D., University of Wisconsin, Milwaukee

Renne, Diane J. (2000), Assistant Professor of Special Education; B.S., M.S., University of Kansas; Ed.D., University of Kentucky

Ridley, Dale Scott (1990), Associate Professor of Educational Psychology; B.S., New Mexico State University; M.A., Ph.D., University of Texas, Austin

Rillero, Peter (1994), Associate Professor of Science Education; B.A., State University of New York, Buffalo; M.A., Columbia University; Ph.D., Ohio State University

Rodriguez, Nancy (1998), Assistant Professor of Administration of Justice; B.S., Sam Houston University; Ph.D., Washington State University

Ruff, William G. (2002), Assistant Professor of Educational Administration; B.S., Colorado State University, Fort Collins; M.A., Webster University; M.A., Ed.D., University of Texas, San Antonio

Ryan, Joseph M. (1995), Professor of Education; Director, Research Consulting Center; A.B., M.Ed., Boston College; Ph.D., University of Chicago

S

Sabatini, Arthur J. (1991), Associate Professor of Performance Studies; B.A., M.A., Ohio University; Ph.D., New York University

Schmidtke, Paul C. (1998), Senior Lecturer of Astronomy; B.S., Rose-Hulman Institute of Technology; Ph.D., Ohio State University

Searle, Mark S. (1995), Professor of Recreation and Tourism Management; Vice Provost for Academic Affairs; B.A., University of Winnipeg (Canada); M.S., University of North Dakota; Ph.D., University of Maryland

Sen, Nilanjan (1992), Associate Professor of Finance; B.A., Jadavpur University (India); M.A., Ph.D., Virginia Polytechnic Institute

Shaffer, Dennis M. (2000), Assistant Professor of Social and Behavioral Sciences; B.S., Denison University; M.A., Ph.D., Kent State University

Shell, Leslee B. (2001), Assistant Librarian; B.A., Oklahoma State University; M.L.S., University of Arizona

Shirreffs, Janet H. (1977), Professor Emerita of Human Services; B.S., Ithaca College; M.S., Syracuse University; Ph.D., Texas Woman's University

Shome, Raka (1999), Assistant Professor of Communication Studies; B.A., University of Calcutta (India); Ph.D., University of Georgia, Athens

Silberman, Jonathan (1992), Professor of Economics; B.S., Bowling Green State University; M.S., Ph.D., Florida State University

Simmons, William P. (2002), Assistant Professor of Political Theory; B.A., University of Wisconsin; M.A., Ph.D., Louisiana State University

Slotnick, Susan A. (1998), Assistant Professor of Operations Productions Management; A.B., Brandeis University; M.S., Ph.D., Carnegie Mellon University; M.A., M.Phil., Ph.D., Columbia University

Soto, Leandro (2002), Senior Lecturer and Artist in Residence; B.F.A., National School for the Arts (Cuba); M.F.A., University of Havana (Cuba)

Sowell, Evelyn J. (1990), Professor of Education; B.A., Howard Payne College; M.Ed., Wichita State University; Ed.D., Northern Illinois University

St. Clair, Charles E. (1991), Fine Arts Specialist; B.F.A., Fairmount Center for Creative and Performing Arts

Stage, Sarah J. (1994), Professor of Women's Studies; B.A., University of Iowa; M.A., University of Massachusetts; M.Phil., Ph.D., Yale University

Stryker, Linda L. (1985), Associate Professor of Astronomy; Chair, Department of Integrative Studies; B.A., Whittier College; B.A., M.S., San Diego State University; M.A., California State University, Los Angeles; Ph.D., Yale University

Sullivan, Brian K. (1989), Associate Professor of Evolutionary Biology; B.A., University of California, Berkeley; Ph.D., Arizona State University

Svoboda, William S. (1969), Professor Emeritus of Education; B.S., M.S., Ed.D., University of Kansas

Sweat, Ken Gunter (2000), Lecturer of Life Sciences; B.A., Claremont McKenna College; M.S., Arizona State University

Swenson, Daniel (2000), Associate Professor of Accountancy; B.A., Memphis State University; Ph.D., University of Mississippi

T

Taylor, Robert D. (1996), Associate Professor of Theatre Performance; Chair, Department of Interdisciplinary Arts and Performance; B.A., Crewe and Alsager College, Manchester Metropolitan University (United Kingdom); M.A., University of Essex (United Kingdom); Ph.D., University of Kansas

Thording, Lars (2002), Lecturer of Marketing; B.Ed., Royal Danish School of Educational Studies (Denmark); M.A., Odense University (Denmark); Ph.D., University of Southern Denmark (Denmark)

Toel, William H. (2001), Lecturer of Finance; M.B.A., University of Illinois, Chicago

Toth, Stephen A. (2000), Assistant Professor of History; B.A., B.S., University of Nebraska at Omaha; M.A., Arizona State University; Ph.D., Indiana University

Tsoudis, Olga (2002), Visiting Assistant Professor of Administration of Justice; B.S., Cornell University; M.A., Ph.D., University of Arizona

U

Ukpanah, Ime J. (2001), Assistant Professor of History; B.S., M.A., Sam Houston State University; Ph.D., University of Houston

V

Vakiladeh, Ardeshir (2002), Lecturer of Mathematics; B.S., Florida Agricultural and Mechanical University; M.S., Ph.D., Tehran University (Iran)

Van Fleet, David D. (1989), Professor of Management; Director, Master of Business Administration Program; B.S., Ph.D., University of Tennessee, Knoxville

Vaughan, Suzanne (1987), Associate Professor of Sociology; B.A., Roanoke College; M.A., University of New Mexico; Ph.D., Ohio State University

Vickrey, Don W. (1992), Professor of Accountancy; B.B.A., University of Houston; M.B.A., Ph.D., University of Texas, Austin

W

Waldman, David A. (1995), Professor of Management; B.A., University of Kentucky; M.S., Ph.D., Colorado State University

Waldron, Kathleen M. (2002), Lecturer of Gerontology; B.A., University of Dayton; M.S., University of Texas, Dallas

Waldron, Vincent R. (1992), Professor of Communication Studies; B.A., M.A., University of Arizona; Ph.D., Ohio State University

Webb, Vincent J. (1996), Professor of Administration of Justice; B.A., University of Omaha; M.A., University of Nebraska, Omaha; Ph.D., Purdue University

Wertheimer, Eric (1995), Associate Professor of American Literature; B.A., Haverford College; M.A., Ph.D., University of Pennsylvania

Wilhelm, Lance A. (2002), Lecturer of Technology in Education; B.S., M.S., Ph.D., Iowa State University

Williams, Mia K. (2002), Lecturer of Technology in Education; B.S., Northern Arizona State University; M.Ed., Arizona State University

Wilson, Denward J. (1989), Lecturer of Philosophy; B.A., Arizona State University; M.A., University of California, Davis

Wise, John Macgregor (1999), Associate Professor of Communication Studies; Chair, Department of Communication Studies; B.A., Trinity University; M.A., University of Illinois, Urbana-Champaign; Ph.D., Purdue University

Wosinska, Wilhelmina (1994), Senior Lecturer of Social Psychology; B.A., University of Warsaw (Poland); M.A., Ph.D., Jagiellonian University (Poland)

Y

Yungbluth, Stephen C. (2000), Lecturer of Communication Studies; B.A., Xavier University; M.A., University of Kentucky

Z

Zambo, Ronald W. (1991), Associate Professor of Mathematics Education; B.S., Indiana University, Bloomington; M.A., Ph.D., University of South Florida

Zorita, Paz Méndez-Bonito (1993), Associate Professor of Social Work; A.S., School of Social Work of Gijon (Spain); M.S.S.A., Ph.D., Case Western Reserve University

ASU West Administrative Personnel

Administration

Provost, ASU West; Vice President, ASU ..... Elaine P. Maimon
Executive Vice Provost ..... Gebeyehu Ejigu
Vice Provost for Academic Affairs ..... Mark S. Searle
Associate Vice Provost, Academic Programs and Graduate Studies ..... Fernando Delgado
Associate Vice Provost, Research and Faculty Development ..... Manuel Ávalos
Director, Curriculum and Academic Articulation ..... Julia R. Ramsden
Director, Research Consulting Center ..... Joseph M. Ryan
Faculty Director, Barrett Honors College ..... R. Eric Ramsey
Vice Provost for Planning and Budget ..... Barry R. Bruns
Vice Provost for Institutional Advancement ..... Carol A. Poore
Dean, ASU West Library ..... Marilyn Myers
Dean of Students ..... Jo Ann Madonna

College of Arts and Sciences

Dean, College of Arts and Sciences ..... Emily F. Cutrer
Associate Dean, College of Arts and Sciences ..... Candice D. Bredbenner
Cochair, Department of American Studies ..... A. Duku Anokye
Cochair, Department of American Studies ..... Thomas W. Cutrer
Chair, Department of Integrative Studies ..... Linda L. Stryker
Chair, Department of Interdisciplinary Arts and Performance ..... Robert D. Taylor
Chair, Department of Life Sciences ..... Douglas Dennis
Chair, Department of Social and Behavioral Sciences ..... Paul A. Miller
Chair, Women's Studies Program ..... Astair G. M. Mengesha

College of Education

Dean, College of Education ..... Michael A. Awender
Assistant Dean, College of Education ..... Ray R. Buss
Chair, Department of Elementary Education ..... Michael F. Kelley
Chair, Department of Graduate Studies and Professional Development ..... Eleanor A. Perry
Chair, Department of Secondary Education ..... Nancy S. Haas
Chair, Department of Special Education ..... Ida M. Malian

College of Human Services

Interim Dean, College of Human Services ..... John T. Hultsman
Chair, Department of Administration of Justice ..... *To Be Appointed*
Chair, Department of Communication Studies ..... John Macgregor Wise
Chair, Department of Recreation and Tourism Management ..... Wendy Hultsman
Chair, Department of Social Work ..... Melissa R. Lavitt
Director, Gerontology Program ..... Richard Gitelson
Interim Director, Partnership for Community Development ..... Richard C. Knopf
Liaison, Nursing (ASU Main Program) ..... Lasca Beck

Division of Collaborative Programs

Faculty Director, Division of Collaborative Programs ..... Afsaneh Nahavandi

School of Management

Dean, School of Management ..... Bruce A. Forster
Chair, Department of Accounting and Information Systems Management ..... William A. Duncan
Chair, Department of Economics, Finance, Marketing and Quantitative Business Analysis ..... Joseph A. Bellizzi
Chair, Department of Management ..... Leanne E. Atwater

ASU Extended Campus

www.asu.edu/xed **Bette F. DeGraw, Ph.D., Dean, College of Extended Education**

PURPOSE

The College of Extended Education was created in 1990 to extend the resources of ASU throughout Maricopa County, the state, and beyond. The College of Extended Education is a university-wide college that oversees the ASU Extended Campus and forms partnerships with other ASU colleges to meet the instructional and informational needs of a diverse community.

For the most current information, visit the college's Web site at www.asu.edu/xed.

ASU EXTENDED CAMPUS

The ASU Extended Campus goes beyond the boundaries of the university's three physical campuses to provide access to quality academic credit and degree programs for working adults through flexible schedules; a vast network of off-campus sites; classes scheduled days, evenings, and weekends; plus innovative delivery technologies, including television, the Internet, and independent learning. The ASU Extended Campus also offers a variety of professional continuing education and community outreach programs.

DEGREE PROGRAMS

ASU offers degree programs through the ASU Extended Campus. Convenient times and locations, as well as today's innovative technologies, make it easier for working adults and other nontraditional students to earn a degree. The College of Extended Education facilitates the delivery of these programs. All courses and degrees are offered by the respective university academic departments. These courses are published each fall and spring semester in the *Extended Campus Catalog* and in the *Schedule of Classes*. All degree programs offered through the college are shown in the "Baccalaureate Degrees and Majors Offered Through the College of Extended Education" table, page 672, and the "Graduate Degrees and Majors Offered in Collaboration with the College of Extended Education" table, page 673.

Undergraduate Degrees

OFF-CAMPUS DEGREE PROGRAMS

Interdisciplinary Studies—B.I.S.

ASU Main. This interdisciplinary degree completion program enables students to take an active role in creating their educational plans and defining their career goals. The program is offered for selected corporate and municipal employees. It emphasizes self-assessment and appraisal of *opportunities to support academic and career goals*. For more information, call 480/965-9797, or write

COLLEGE OF EXTENDED EDUCATION
ACADEMIC AND PROFESSIONAL PROGRAMS
ARIZONA STATE UNIVERSITY
PO BOX 874001
TEMPE AZ 85287-4001

Housing and Urban Development—B.S.D.

ASU Main. The faculty in the School of Planning and Landscape Architecture in the College of Architecture and Environmental Design offer this degree primarily at the ASU Downtown Center, although some courses may be available at other locations and via cable television. See the fall and spring issues of the *Extended Campus Catalog* for complete scheduling information. For program information, call 480/965-7167, or write

SCHOOL OF PLANNING AND LANDSCAPE
ARCHITECTURE
ARIZONA STATE UNIVERSITY
PO BOX 872005
TEMPE AZ 85287-2005

Elementary Education—B.A.E.

ASU Main. This off-campus degree program is targeted to school district audiences. To learn more, call 480/965-1644.

Social Work—B.S.W.

ASU Main. The School of Social Work offers this degree in Tucson. This program is grant-funded for a five-year period and offers a part-time curriculum designed to increase the number of trained child welfare social workers in the rural areas of Arizona. For more information, call 520/884-5507, extension 19.

Applied Science—B.A.S.

ASU West. ASU West, working through the College of Extended Education, offers courses to meet the degree completion needs of students. Students who have completed an

Baccalaureate Degrees and Majors Offered Through the College of Extended Education

Major	Degree	Concentration	Administered By
Applied Science	B.A.S.	Aviation maintenance management technology, aviation management technology, computer systems administration, consumer products technology, digital media management, digital publishing, emergency management, fire service management, food retailing, food service management, instrumentation, manufacturing technology and management, microcomputer systems, multimedia writing and technical communication, municipal operations management, operations management, resource team specialist, semiconductor technology, software technology applications, technical graphics	Bachelor of Applied Science Advisory Committee (ASU East)
		All minors available at ASU West, individualized concentration	Division of Collaborative Programs (ASU West)
Communication	B.A., B.S.	—	Hugh Downs School of Human Communication
Elementary Education	B.A.E.	Multilingual/multicultural education	Division of Curriculum and Instruction
English	B.A.	Linguistics, literature	Department of English
History	B.A.	—	Department of History
Housing and Urban Development	B.S.D.	—	School of Planning and Landscape Architecture
Interdisciplinary Studies	B.I.S.	See the "B.I.S. Concentrations" table, page 118.	Bachelor of Interdisciplinary Studies Advisory Committee
Political Science	B.A.	—	Department of Political Science
	B.S.	Public policy advocacy and lobbying, public policy analysis	
Psychology	B.A., B.S.	—	Department of Psychology
Religious Studies	B.A.	—	Department of Religious Studies
Social Work	B.S.W.	—	School of Social Work
Sociology	B.A.	—	Department of Sociology

Associate of Applied Science (A.A.S.) degree can enroll in the B.A.S. degree program.

This program emphasizes focused study in critical thinking, communication, and leadership skills and includes individual and team problem-solving experiences. Courses are designed to refresh students' academic skills and to develop the resources to succeed in their educational pursuits.

Concentration areas, under the Bachelor of Applied Science (B.A.S.) at ASU West, are developed by the advisor and student based on educational goals and interests. The West Campus B.A.S. core curriculum is focused on the arts, computers, writing, ethics, and career development. For more information on the West Campus B.A.S., call 602/543-4BAS or access the Web site at www.west.asu.edu/bas.

ASU East. Students holding an Associate of Applied Science (A.A.S.) degree from a regionally accredited community college can earn the Bachelor of Applied Science (B.A.S.) degree by completing 60 semester hours of upper-division course work through ASU East.

This degree is practical and flexible. ASU East faculty and advisors work with students to match a 60-semester-hour program of study to their individual interests and career goals, or students may select one of the concentrations shown in the "Baccalaureate Degrees and Majors Offered Through the College of Extended Education" table, on this page.

For more information, call 480/727-1874.

TECHNOLOGY-SUPPORTED DEGREE PROGRAMS

History—B.A.

ASU Main. The faculty in the Department of History offer the B.A. degree completion program in History via technology. (Students are required to take at least two of the courses on campus in the evening.) For more information, call 480/965-8364.

Graduate Degrees and Majors Offered in Collaboration with the College of Extended Education

Major	Degree	Concentration	Administered By
Business Administration	M.B.A.	—	W. P. Carey School of Business (ASU Main) School of Management (ASU West)
Curriculum and Instruction	M.Ed.	Secondary education	Division of Curriculum and Instruction
Educational Administration and Supervision	Ed.D.	—	Division of Educational Leadership and Policy Studies
Electrical Engineering	M.S.E.	—	Department of Electrical Engineering
Engineering	M.E.*	—	School of Engineering
Public Administration	M.P.A.	—	School of Public Affairs
Social Work	M.S.W.	Advanced direct practice; planning, administration, and community practice	School of Social Work
Technology	M.S.Tech.	Environmental technology management	Department of Information and Management Technology (ASU East)

* This collaborative program is offered by the three state universities.

ON-CAMPUS EVENING DEGREE PROGRAMS

CLAS Bachelor's Degree Programs

ASU Main. Students who enroll in the College of Liberal Arts and Sciences (CLAS) evening degree program typically have completed 60 lower-division semester hours. They may pursue a Bachelor of Arts degree in English, History, Political Science, Sociology, Psychology, or Religious Studies, or a Bachelor of Science degree in Political Science or Psychology. For more information, call 480/965-3986 and request "degree programs."

Communication—B.A. or B.S.

ASU Main. The faculty in the Hugh Downs School of Human Communication offer the B.A. and B.S. degrees in Communication through the College of Extended Education's Evening Degree Program. For more information, call 480/965-5095.

Graduate Degrees

OFF-CAMPUS DEGREE PROGRAMS

Business Administration—M.B.A.

ASU Main. The technology M.B.A. is an evening program designed specifically for technology professionals. The degree program is offered at the ASU Research Park. Cases, applications, and examples emphasize technology, global competition, and rapid organizational change. For more information, call 480/965-3332.

The evening M.B.A. is offered at the ASU Downtown Center. It is designed to meet the needs of working professionals and combines theoretical concepts with practical applications. For more information, call 480/965-3332.

ASU West. The ScottsdaleMBA degree program meets in the Scottsdale Airpark in north Scottsdale. Classes emphasize the development of critical learning skills, with practical application in analyzing local industries. Students, faculty, and industry experts work together on projects for local companies. The integrated curriculum provides a comprehensive understanding of interrelated business issues. For more information, call 602/543-6201.

Public Administration—M.P.A.

ASU Main. The School of Public Affairs offers this interdisciplinary program. The program provides professional training for careers in public administration and management. Opportunities for completing course work leading to the M.P.A. are offered during evening hours at ASU Main, the ASU Downtown Center, and various off-campus sites. For more information, call 480/965-3926, or write

SCHOOL OF PUBLIC AFFAIRS
ARIZONA STATE UNIVERSITY
PO BOX 870603
TEMPE AZ 85287-0603

Curriculum and Instruction—M.Ed.

ASU Main. The Master of Education degree in Curriculum and Instruction is offered with a concentration in secondary education. This is an off-campus degree program targeted to school district audiences. For more information, call 480/965-1644.

Social Work—M.S.W.

ASU Main. The Master of Social Work program prepares social workers to respond effectively to the needs of the state and other populations of the Southwest. This program is offered in Tucson. Call 520/884-5507 for more information about the Tucson Component.

DELTA Doctorate

ASU Main. The DELTA Doctorate, which leads to the Doctor of Education degree in Educational Administration and Supervision, is available as an off-campus degree program. The program is targeted to qualified public school administrators. For more information, call 480/965-7224.

TECHNOLOGY-DELIVERED DEGREE PROGRAMS

Electrical Engineering—M.S.E.

ASU Main. The faculty in the Department of Electrical Engineering offer the Master of Science in Engineering (M.S.E.) degree in Electrical Engineering via interactive television. This program meets the needs of the part-time student who is working full-time in industry. Ten graduate courses are required; six should constitute a major, two courses a minor, and two courses should be taken outside the Department of Electrical Engineering. After completing the required hours of course work, students in this program must pass a comprehensive examination covering topics in the major. Using the department's three-year schedule of courses, students are able to complete course requirements over the interactive television system. For more information, call 480/965-3590.

Business Administration—M.B.A.

ASU Main. The ASU MBA Online program leverages computer and communications technologies to offer the highly ranked ASU M.B.A. to managers and professionals who do not wish to attend a traditional, on-campus program. The program consists of on-site sessions, asynchronous technology-based materials, and electronic communication among faculty and students. This two-year program consists of 12 four-semester-hour courses. For more information, call 480/965-3332.

ASU West. The connectMBA allows working professionals to complete a quality, AACSB International-accredited M.B.A. without weekly attendance on campus. Course delivery combines classroom instruction (every seventh weekend) with self-paced, computer-assisted learning. The two-year program consists of 15 three-semester-hour courses. For more information, access the Web site at www.west.asu.edu/som/mba.

Engineering—M.E.

ASU Main. The tri-university Master of Engineering (M.E.) degree program is intended to meet the educational needs of Arizona's practicing engineers. With industry input, Arizona's three state universities—Arizona State University, Northern Arizona University, and University of Arizona—enhance the skills, knowledge, and understanding that are critical to today's practicing engineers. The courses are offered through a variety of distance-delivery methods in flexible formats at any of the three universities.

The M.E. degree offers the practicing engineer opportunities to design, in conjunction with an advisory committee, a program of study that can reflect the increasingly interdisciplinary nature of engineering practice. The M.E. degree requires the completion of 30 semester hours of course work; students must complete a minimum of three semester hours in applied engineering mathematics, as well as three semester hours of engineering management/business. Up to six semester hours from a practice-oriented project may be applied. A final examination is required.

For application information, call 480/965-1726, send e-mail to m.eng@asu.edu, or access the program's Web site at triuniv.engr.arizona.edu.

Technology—M.S.Tech.

ASU East. The faculty in the Department of Information and Management Technology offer this degree with a concentration in environmental technology management. Two areas of study are available within the concentration: international environmental management and emergency management through a Web-based distance learning format. Students in this program are part of a cohort group that begins each January and graduates 24 months later at the December ceremony.

Students in the distance learning cohort are expected to be working professionals in fields such as ES&H (environmental, health, and safety), environmental engineering, emergency management, national or local regulatory and permitting activities, environmental law, and environmental laboratories. A variety of undergraduate degree preparation is appropriate, but students should have at least one course in inorganic chemistry and one course in organic chemistry. For more information, access the Web site at www.east.asu.edu/ctas/imt/etm/html/dmasters.html.

ON-CAMPUS EVENING DEGREE PROGRAM

Public Administration—M.P.A.

ASU Main. The School of Public Affairs offers this interdisciplinary program, designed to provide professional training for careers in public administration and management. Opportunities for completing course work leading to the M.P.A. are offered during evening hours at ASU Main, the ASU Downtown Center, and various off-campus sites. For more information, call 480/965-3926, or write

SCHOOL OF PUBLIC AFFAIRS
ARIZONA STATE UNIVERSITY
PO BOX 870603
TEMPE AZ 85287-0603

Winter Session (Main)

The College of Extended Education schedules the Winter Session courses in collaboration with academic departments. The condensed session is offered between the fall and spring semesters. For more information about Winter Session, call 480/965-9797.

Certificate Programs

Certificate programs provide opportunities for those seeking to advance their careers, to begin a new career, to reenter the workplace, or simply to develop new knowledge. A practical choice for career development, certificate programs are recognized by employers as evidence of professional skill or accomplishment.

Business English Certificate

Designed to help international students and professionals succeed in the world of business, this program offers five courses: business communication, business decisions, business writing, international business, and TOEIC test preparation. Once students successfully complete three certificate courses, they earn a Business English Certificate. If they wish to complete all five classes, they earn an Advanced

Business English Certificate. Classes are ongoing and meet several hours a week for eight weeks.

For more information, call the American English and Culture Program at 480/965-2376, send e-mail to aecp@asu.edu, or access the Web page at www.asu.edu/xed/aecp/aboutaecp.html.

This certificate is not for academic credit.

English as a Second Language Certificate

The College of Extended Education offers a certificate in the study of English as a second language (ESL), comprising 21 hours a week for eight weeks of language and culture training. For more information, see "American English and Culture Program," page 677, call 480/965-2376, send e-mail to aecp@asu.edu, or access the Web page at www.asu.edu/xed/aecp/aboutaecp.html.

Gerontology Certificate Program

The Gerontology Program is interdisciplinary, bringing together faculty from several disciplines to collaborate on gerontological research, to teach courses related to adult development and aging, and to participate in projects of service to older adults.

The Certificate in Gerontology, offered by the Graduate College, is available to graduate students enrolled in master's or doctoral degree programs in disciplines such as communication, exercise science, nursing, psychology, social work, and sociology. Unclassified graduate students may pursue the certificate. This program consists of 24 semester hours evenly divided between required and elective course work.

The Gerontology Program has an affiliated faculty of more than 60 members based in 22 different departments throughout the university. Students can work on independent study or participate with faculty in their aging-related research.

Because of increased longevity, there could be more than 30 million Americans over the age of 85 by 2040, a demographic change with many ramifications. The certificate is designed for individuals interested in learning more about the aging process. For more information, call 480/965-3225 (ASU Main) or 602/543-6603 (ASU West).

KnowledgeNet Certificate

The college has partnered with KnowledgeNet to provide the most current and accurate information and content to match each student's learning style. With live, instructor-led classroom sessions delivered via the Internet to engaging, effective, self-paced training programs, this program has taken learning to the next generation and beyond. Effective training in the areas of networking, operating systems, e-business, business applications, and many other topics are available online.

Human Performance Improvement Certificate Program

The Human Performance Improvement Certificate Program is offered at the Downtown Center by the College of Extended Education and the American Society of Training and Development. This program is designed to provide a well-rounded understanding of the human performance improvement field for those in a human resource capacity. Individuals can receive a Human Performance Improvement Certificate after completing the six courses of the program or may elect to enroll in one or more classes on a per-class basis. For more information, call 480/965-9200.

This certificate is not for academic credit.

Maintenance Management Certificate Program

This program improves maintenance performance for organizations by exploring the latest technical, profit-making, and cost-cutting ideas in the industry. This is a four-part, results-oriented seminar series. Participants can receive a Maintenance Management Certificate after completing all courses of the program or may elect to enroll in one or more classes on a per-class basis. Courses are offered at the ASU Downtown Center. For more information, call 480/965-9200.

This certificate is geared toward professional development, and Continuing Education Units (CEUs) are available. The certificate is not for academic credit.

Professional Purchasing Certificate Program

This is a four-part seminar series that covers the latest technical, profit-making, and cost-cutting ideas to improve purchasing management. Students may enroll in the results-oriented seminars individually or combine them to earn a National Association of Purchasing Managers-approved Professional Purchasing Certificate. Each seminar is held at the ASU Downtown Center. For more information, call 480/965-9200.

This certificate is geared toward professional development, and Continuing Education Units (CEUs) are available. This certificate is not for academic credit.

Spanish Language Court Interpreter Certificate Program

The program, developed and implemented by the College of Extended Education and the Superior Court of Maricopa County, is designed to prepare students who are fluent in Spanish and English for a career in court interpreting. The program provides comprehensive training that focuses on interpretation, translation, and legal skills needed to be an effective court interpreter. The program is not designed to teach participants the languages. Applicants fluent in English and Spanish must successfully complete oral and written examinations before acceptance into the program. For more information, call 480/965-9200.

This certificate is geared toward professional development, and Continuing Education Units (CEUs) are available. This certificate is not for academic credit.

Supervisory and Management Skills Certificate Program

The certificate is a 56-semester-hour program that provides supervisors the opportunity to enhance their skills in a number of areas. The program is divided into seven core areas: interviewing and hiring; principles and practices of supervision; motivating employees; coaching for improved performance; effective conflict management; problem solving techniques; and cultural diversity in the workplace.

College of Extended Education Certificates

Certificate Program	Administered By
Advanced Business English Certificate	College of Extended Education
Business English Certificate	College of Extended Education
English as a Second Language Certificate	College of Extended Education
Gerontology Certificate	Graduate College
Human Performance Improvement Certificate	College of Extended Education and American Society of Training and Development
KnowledgeNet Certificate	College of Extended Education
Maintenance Management Certificate	College of Extended Education
Professional Purchasing Certificate	College of Extended Education
Spanish Language Court Interpreter Certificate	College of Extended Education and Superior Court of Maricopa County
Supervisory and Management Skills Certificate	College of Extended Education
Transportation Systems Certificate	Committee on Transportation Systems and the Graduate College

Transportation Systems Certificate Program

The interdisciplinary studies certificate program offers current ASU graduate students and transportation professionals the opportunity to pursue a wide range of transportation-related issues from multi-modal and interdisciplinary perspectives. The certificate is intended to be either a specialization within an existing master's degree program or a stand-alone 15 semester hour nondegree program.

For more information, access the Web site at www.asu.edu/caed/transportation, or call 480/965-6693.

College Units by Program Area

Degree Programs and Credit Courses

The College of Extended Education facilitates the delivery of several degree programs and credit courses. Convenient times and locations, as well as today's innovative technologies, make it easier for working adults and other nontraditional students to earn degrees. All courses and degrees are offered by the respective university academic departments. These courses are published each fall and spring semester in the *Extended Campus Catalog* and the *Schedule of Classes.*

Academic and Professional Programs. As a convenience to students, courses are conducted off campus in locations throughout the state, and on campus in the evening and during the Winter Session.

Academic credits earned off campus are recorded on a student's permanent record in the same manner as those earned on campus and are equivalent in all academic considerations. All ASU academic standards, including policies related to admission and registration, apply to off-campus courses. It is the responsibility of the student to be aware of all applicable policies before registering. It is the responsibility of each dean to determine what courses to offer off campus and to make faculty assignments.

The tuition and fees for off-campus credit courses are the same as for those offered on campus. (See resident and nonresident rates in the latest *Schedule of Classes.*) Before the 21st calendar day of each semester, any combination of on-campus and off-campus resident credit courses resulting in a combined registration of seven or more semester hours requires that the student pay full-time tuition. Off-campus credit courses and programs that commence on or after the 21st calendar day of the start of each semester require full-time and part-time students to pay tuition separate from (but in addition to) those courses starting before the 21st calendar day of the semester.

Professional continuing education activities focus on professional and personal development as well as lifelong learning. Programs are planned and developed to complement the missions of the college and the university. These programs can be customized and transported to reach numerous target populations and levels of need.

Distance Learning and Technology. Distance Learning and Technology uses a variety of technologies. Semester-based courses are offered through Instructional Television Fixed Service, cable television, public television, satellite, microwave, videotape, and the Internet. In addition, independent learning courses are offered (print- or Internet-based). Distance Learning and Technology makes it possible for many people to access and share educational resources locally, regionally, nationally, and internationally through a variety of electronic technologies and distribution systems. In addition to distance learning courses, other products and services are available, including teleconferencing and video production.

Many students are unable to attend class on campus due to schedule or commuting difficulties and prefer to participate in distance learning courses at convenient locations such as the work site or home. The distance learning course schedule consists of approximately 220 courses offered by various ASU colleges each semester, and these courses are available for credit at a variety of remote locations, including students' homes. Videotapes of most televised courses are available through University Libraries. Other student support services are available to assist off-campus students.

Cable/Public Television. ASU offers credit courses that require students to view televised class sessions and complete work assignments at home. Exams usually are held on campus. Courses are available throughout the Phoenix area via KAET Channel 8, Cox Communications, Qwest, and other cable providers. Televised courses are also available in university residence halls at ASU Main.

Interactive Instructional Television Program (IITP). Students employed by companies participating in the IITP may take courses for credit at the work site. A daily courier service circulates course materials between faculty on campus and their students at remote sites. Exams typically are held at the work site. Each company has an on-site coordinator to assist with registration, to provide information, and to proctor exams. An M.S.E. degree with a major in Electrical Engineering is available through the IITP. More information about the degree is available from the College of Engineering and Applied Sciences at 480/965-3590.

Interactive Television (Public Sites). Certain sites are open to the public. Students can participate in most televised courses at locations such as ASU Downtown Center, ASU East, ASU West, select community college campuses, Cactus Shadows High School, and the Gila River Indian Community. Each site has an on-site coordinator to assist with registration, to provide information, and to proctor exams.

Internet Courses. ASUonline is the university's gateway to an "online campus." Internet courses are offered by various departments through ASU Extended Campus, allowing students to participate from any location in the world. Through the Web, students can access lectures, participate in class assignments, interact with the instructor, collaborate with other students, and earn ASU credit at convenient times and locations. Students register for Internet courses through the normal university admissions and registration process. Certain computer hardware and software may be required for Internet courses. For more information, call 480/965-3590, or access the Web site at asuonline.asu.edu.

Independent Learning. These courses allow students to pursue ASU credit and to fulfill degree requirements or to enhance occupational, professional, and intellectual skills. Independent Learning courses are appropriate for students seeking flexibility in progressing through ASU courses. Anyone with a high school diploma or GED may enroll; however, enrollment in Independent Learning is not the same as admission to ASU. For ASU degree-seeking students, enrollment in these courses requires an advisor's and dean's approval. Generally, ASU students may take one course at a time—other students can participate in two. A maximum of 60 semester hours earned by independent learning and/or by comprehensive examination may be applied toward the baccalaureate degree at ASU. Independent Learning courses are not applicable toward graduate credit, and pass/fail options are not available. Grades earned are not calculated in the ASU Honors G.P.A. Students have up to one year to complete courses. Independent Learning courses may not be used to change a grade at ASU. An independent learning registration fee is required of all students, including full-time students who have paid registration fees and tuition. Tuition waivers do not apply to independent learning. On-campus services and activities for students are not covered by independent learning fees. More information on registration, lesson formats, submission of assignments, correspondence with instructors, and other course details is available in a catalog from the Independent Learning office, at 480/965-6563.

Professional Continuing Education

Academic and Professional Programs provides professional continuing education programs throughout the Phoenix metropolitan area. These ongoing programs are intended to improve professional competence and address current issues and trends, and are offered to adult learners in collaboration with ASU colleges, other educational providers, professional associations, and public and private organizations. In addition, the Elderhostel Program, a series of challenging, thought-provoking college-level courses, is offered to people over 55. For more information, call 480/965-9200.

Global and Community Outreach

American English and Culture Program. The American English and Culture Program (AECP) features an intensive course of study designed for adult international students who want to become proficient in English as a second language for academic, professional, or personal reasons. Applicants must be at least 18 years of age and must have a high school diploma or its equivalent. All conditions of the U.S. Immigration and Naturalization laws pertaining to full-time study in the United States must be met by all applicants. Students must take an English placement test before the beginning of classes. Certificates of achievement are awarded on completion of the course. Admission to the program does not constitute regular admission to ASU.

Beginning, intermediate, and advanced courses provide instruction in listening, reading, speaking, grammar, and writing. Academic advising and orientation to Arizona and the United States are integral parts of the program.

The program provides a wide variety of social, cultural, and recreational activities, including field trips, sports, parties, arts and crafts, concerts, and visits to museums and historical sites.

Advanced-level students may be permitted to enroll concurrently in up to two ASU credit classes with the approval of the director. Several special classes are offered through the AECP: business English, pronunciation, conversation, TOEFL and TOEIC preparation, grammar, and idioms.

The fall and spring semesters are divided into two eight-week cycles. Students may enroll for one or more cycles. An eight-week summer session is also offered. Four-week sessions are offered in January and July. AECP also offers evening English classes and business English certificates.

Inquiries concerning admission requirements, enrollment, and fee schedules should be sent to

AMERICAN ENGLISH AND CULTURE PROGRAM
ARIZONA STATE UNIVERSITY
PO BOX 873504
TEMPE AZ 85287-3504

For more information, call 480/965-2376, send e-mail to aecp@asu.edu, or access the Web page at www.asu.edu/xed/aecp/aboutaecp.html.

Extended Campus Programs. Extended Campus Programs was established in response to the rapidly expanding demand for educational services in Maricopa County and throughout Arizona. Analyzing community needs for course offerings, workshops and seminars, the unit oversees the

planning, organizing, and staffing necessary to satisfy these educational needs.

A primary goal of this unit is to ensure that qualified students have access to effective, appropriate university programs. Extended Campus Programs focuses on developing and maintaining education, business, government, professional, and community links to further the university's and college's missions.

The major components of Extended Campus Programs are the lectures and events at the ASU Downtown Center and emerging programs in the east Valley, Scottsdale, and Ahwatukee. For more information, call 480/965-3046.

ASU Downtown Center. The ASU Downtown Center is a university-wide resource located in downtown Phoenix that serves as an educational, applied-research, and community-service facility.

Responding to the needs of business, industry, and state and local governments, the center offers traditional and interdisciplinary upper-division and graduate-level courses. The center also offers professional and continuing education programs, lectures, and community forums, and serves as a meeting location for conferences, workshops and seminars.

ASU faculty, staff, and students may take advantage of the center's computer lab. A lab assistant is available during posted hours. Faculty, staff, and students also can access the ASU library online catalog and ASU library information and resources. Library books may be ordered and returned through the center, and copied materials may be ordered as well. Textbooks for all courses held at the center are available during the first week of classes.

Accommodations for small or large meetings or conferences are available at attractive rates and can include beverages, food service, and professional equipment. Meeting rooms include conference rooms, a board room, and two computer classrooms. Most meeting rooms can be configured in a variety of styles and setups. In addition, break-out areas are conveniently located throughout the facilities. Advice in logistics planning is available as well as a wide range of related services. The center is available for use by outside organizations, subject to the limits of ASU policies and procedures. Contact the center's facility scheduler for details.

For more information about the programs and services provided at the center, call 480/965-3046, or write

ASU DOWNTOWN CENTER
502 E MONROE ST
PHOENIX AZ 85004-4442

Several ASU programs and partnerships are located at the ASU Downtown Center.

Academic and Professional Programs. As part of ASU Extended Campus and the College of Extended Education, Academic and Professional Programs brings the resources of ASU to many who may not be pursuing a traditional degree but are seeking professional and personal enrichment. See "Academic and Professional Programs," page 676, for a description.

Joint Urban Design Program. The Joint Urban Design Program, located in the ASU Downtown Center, is a partnership between the Colleges of Architecture and Environmental Design and Extended Education. The program directs institutional and public resources toward developing an understanding of issues that affect the urban quality of Phoenix. For more information, call 480/727-5146.

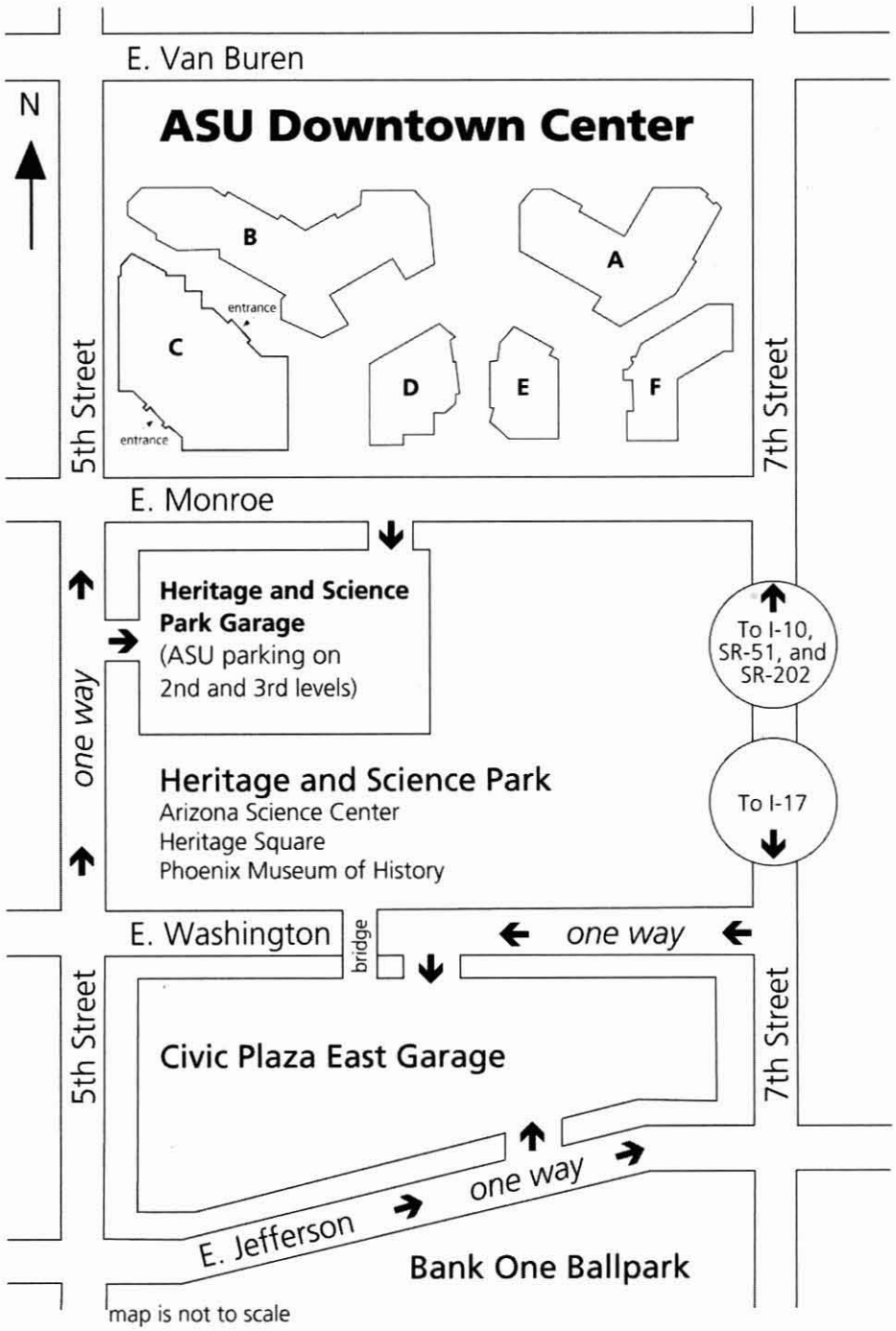
Urban Data Center. The Urban Data Center, a partnership with the College of Public Programs, serves as a resource for analysis and implementation of public policy in the Phoenix metropolitan area. The center works closely with ASU researchers and organizations such as the Joint Urban Design Program, the Morrison Institute for Public Policy, University Libraries, local governments, state agencies, and other independent organizations to build a comprehensive database on policy issues for urban planners and community leaders. For more information, call the ASU Downtown Center at 480/965-3046.

Advanced Public Executive Program. The Advanced Public Executive Program of the College of Public Programs is housed at the ASU Downtown Center. This program is designed to provide public managers and administrators with analytical approaches and skills through short courses and seminars to help mobilize ideas, people, and resources in support of public programs. For more information, call 480/965-4006.

Office of Youth Preparation and Project PRIME. The Office of Youth Preparation and Project PRIME (Project to Improve Minority Education) are housed at the Downtown Center, with evaluation support services located at the Hispanic Research Center. The programs are designed to increase the pool of college-eligible minority students, who have historically been underrepresented in higher education, by providing instructional and support services to seventh- through 12th-grade students and their families at targeted Arizona schools. For more information, call 480/965-8510.

Arizona Drug and Gang Prevention Resource Center. The Arizona Drug and Gang Prevention Resource Center serves as a centralized source for individuals, schools, and communities throughout Arizona to support, enhance, and initiate prevention efforts.

For information about planning, mobilizing, training, and evaluating community prevention efforts, call 480/727-2772.


E. Van Buren
N
ASU Downtown Center
B
A
entrance
C
D
E
F
entrance
5th Street
7th Street
E. Monroe
Heritage and Science
Park Garage
(ASU parking on
2nd and 3rd levels)
one way
To I-10,
SR-51, and
SR-202
Heritage and Science Park
Arizona Science Center
Heritage Square
Phoenix Museum of History
To I-17
E. Washington
bridge
one way
5th Street
7th Street
Civic Plaza East Garage
E. Jefferson
one way
Bank One Ballpark
map is not to scale

ASU Extended Campus Faculty and Academic Professionals

B

Backer, Linda R. (1997), Assistant Instructional Professional, College of Extended Education; Manager, Interdisciplinary Programs, Academic and Professional Programs, College of Extended Education; B.A., University of Colorado; M.S., Colorado State University

C

Cole, Tom (1981), Lecturer, College of Extended Education; Associate Director, American English and Culture Program, College of Extended Education; B.S., Northern Arizona University; M.A., Arizona State University

Craft, Elizabeth H. (1982), Administrative Professional, College of Extended Education; Director, Distance Learning and Technology, College of Extended Education; B.F.A., Ohio University; M.A., Arizona State University

D

DeGraw, Bette F. (1986), Administrative Professional, College of Extended Education; Associate Professor of Public Affairs; Dean, College of Extended Education; Director, Downtown Center; B.A., Thiel College; M.S.W., Rutgers, The State University of New Jersey; Ph.D., Arizona State University

Dehghanpisheh, Elaine (1983), Lecturer, College of Extended Education; B.A., M.A., Pahlavi University (Iran)

E

Edwards, Regina (1995), Assistant Instructional Professional, College of Extended Education; Associate Director, Academic and Professional Programs, College of Extended Education; B.S., M.A., University of Nebraska, Lincoln; Ph.D., University of Hawaii, Manoa

F

Feldman, Patricia A. (1990), Associate Administrative Professional, College of Extended Education; Director, Academic and Professional Programs, College of Extended Education; B.S., M.Ed., Colorado State University

Felix-Sol, Carol (1994), Lecturer, College of Extended Education; B.A., M.A., University of Colorado

Fountaine, Steven (1990), Lecturer, College of Extended Education; B.A., Shepherd College; M.A., Temple University; Ph.D., Arizona State University

G

Graham, Andrea (2000), Instructor, College of Extended Education; B.A., M.A., Arizona State University

K

Kegelman, Jan (1978), Lecturer, College of Extended Education; Coordinator, International Teaching Assistants Program, American English and Culture Program; B.S., University of Massachusetts; M.A., Arizona State University

Kyselka, Christine K. (1990), Associate Administrative Professional, College of Extended Education; Assistant Director, Extended Campus Programs, College of Extended Education; B.S., M.P.A., Arizona State University

L

Lindeman, Mary (1988), Lecturer, College of Extended Education; B.A., St. Mary's University; M.A., University of Houston

Livingston, Mary (1978), Lecturer, College of Extended Education; B.A., M.A., Arizona State University

M

McLaws, Dawnell (2001), Instructional Specialist, College of Extended Education; International Student Advisor, American English and Culture Program, College of Extended Education; B.A., M.A., Brigham Young University

Mitchell, Marie (1980), Lecturer, College of Extended Education; B.A., Fort Hays State University; M.A., School for International Training

P

Pope, Donna (1999), Assistant Instructional Professional, College of Extended Education; Manager, Professional Development Programs, Academic and Professional Programs, College of Extended Education; B.S.W., Texas Women's University; M.S.S.W., University of Texas, Arlington

R

Rentz, Mark D. (1984), Lecturer, College of Extended Education; Director, American English and Culture Program, College of Extended Education; B.A., Bethel College; M.A., William Carey International University

Robinson, Antoniette (1994), Instructor, College of Extended Education; B.A., M.A., State University of New York

S

Schlather, Erica (1993), Instructional Specialist, College of Extended Education; Marketing Coordinator, American English and Culture Program, College of Extended Education; B.A., M.A., Northern Arizona University

T

Thursby, Gayle (1994), Lecturer, College of Extended Education; B.A., University of Colorado; M.A., University of California, Los Angeles

V

Verdini, William A. (1976), Associate Professor of Supply Chain Management; Associate Dean, College of Extended Education; B.S., Case Western Reserve University; M.B.A., D.B.A., Kent State University

Vicens, Wendy (1977), Senior Lecturer, College of Extended Education; B.A., M.A., Northern Arizona University

W

Wagy, Scott (2001), Instructional Specialist, College of Extended Education; Coordinator for Cultural Activities and Programs, American English and Culture Program, College of Extended Education; B.A., M.A., West Virginia University

ASU Extended Campus Administrative Personnel

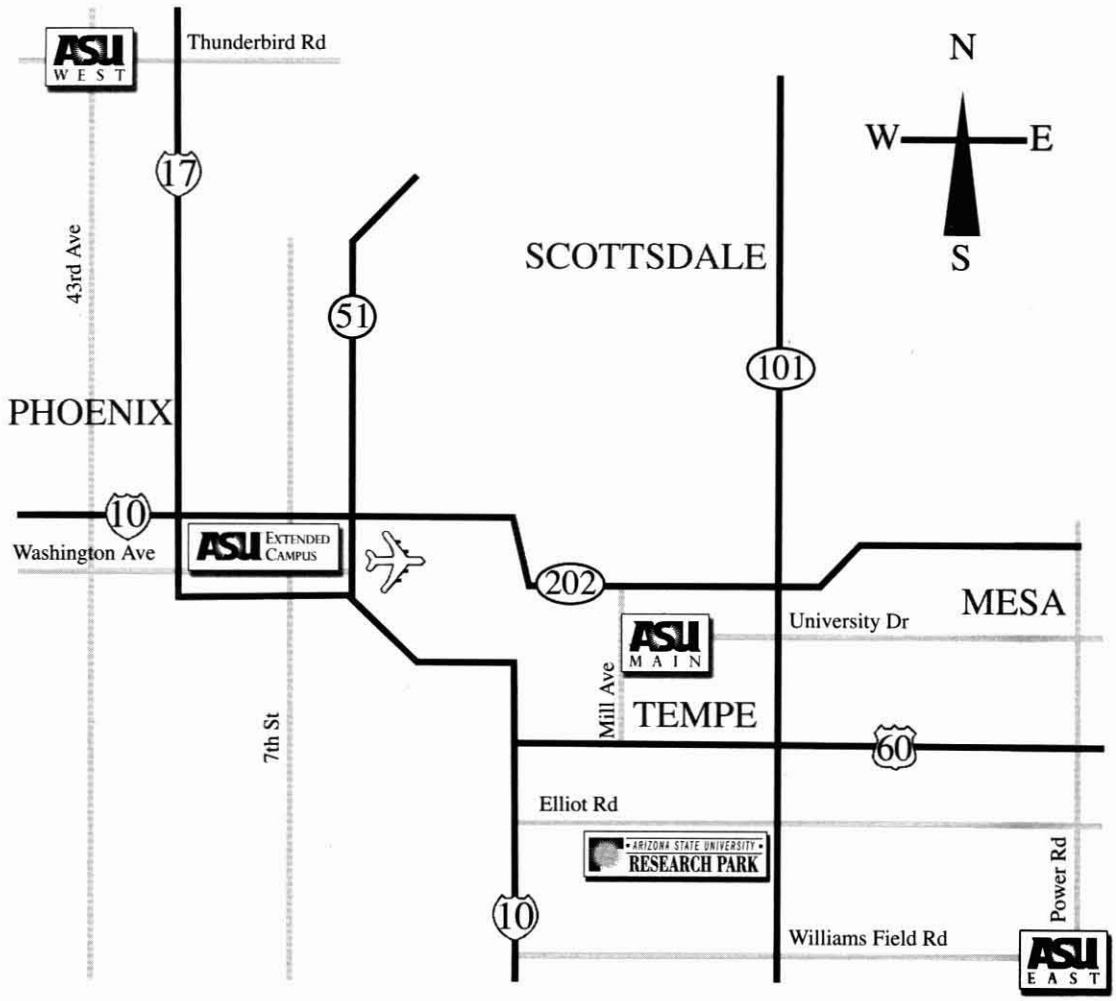
Dean, College of Extended Education . . . . . Bette F. DeGraw
Associate Dean . . . . . William A. Verdini
Assistant Dean . . . . . Elaine Sweet
Director, Academic and Professional Programs . . . . . Patricia A. Feldman
Director, American English and Culture Program . . . . . Mark D. Rentz
Director, Communications and Marketing . . . . . Randy Bailey
Director, Distance Learning and Technology . . . . . Elizabeth H. Craft
Director, Downtown Center . . . . . Bette F. DeGraw
Director, Extended Campus Programs . . . . . Jim Patzer
Director, External Relations . . . . . Scott Sheldon
Director, Property Administration . . . . . Cathie Fox

ASU Extended Campus Directory

For the "ASU Main Directory," see page 505. For the "ASU East Directory," see page 650. For the "ASU West Directory," see page 662.

Organization	Location	Telephone	Web Address
Extended Education, College of	ASUDC C319	480/965-3046	www.asu.edu/xed
Academic and Professional Programs	RITT B132	480/965-9797	—
	ASUDC	480/965-9200	—
American English and Culture Program	MARIP	480/965-2376	www.asu.edu/xed/aecp/esl.html
ASU Downtown Center	ASUDC	480/965-3046	www.asu.edu/xed/dtc
Communications and Marketing	ASUDC C319	480/965-9696	—
Distance Learning and Technology	RITT A129	480/965-6738	www.dlt.asu.edu
Extended Campus Programs	ASUDC C250	480/965-3046	—
External Relations	ASUDC C250	480/727-5330	—
Independent Learning	RITT B132	480/965-6563 or 1-800-533-4806	www.dlt.asu.edu/info/indlearn.html
Planning and Business Services	ASUDC C319	480/965-3046	—
Property Administration	ASUDC C319	480/965-3046	—
Winter Session	RITT B132	480/965-9797	www.asu.edu/xed/winter

ASU VICINITY MAP



ASU MAIN — East of Mill Avenue at University Drive, Tempe

ASU EXTENDED CAMPUS — ASU Downtown Center, Monroe and Fifth Streets, Phoenix

ASU EAST — East of Power Road at Williams Field Road, Mesa

ARIZONA STATE UNIVERSITY RESEARCH PARK — Price and Elliot Roads, Tempe

ASU WEST — 43rd Avenue and Thunderbird Road

Phoenix Sky Harbor International Airport

Accreditation and Affiliation

ASU Main and ASU East. Arizona State University Main is accredited by the Higher Learning Commission and is a member of the North Central Association. For more information, call 312/263-0456, access the Web site at www.ncahigherlearningcommission.org, or write

HIGHER LEARNING COMMISSION
30 N LaSALLE ST
SUITE 2400
CHICAGO IL 60602-2504

Arizona State University East is recognized by the Higher Learning Commission as a full-service campus and is accredited under the ASU Main umbrella. Programs in the various colleges, schools, divisions, and departments are accredited by, affiliated with, or members of national bodies as described in the "Academic Accreditation at ASU Main and East" table below; "Academic Affiliation and Membership" table, page 685. Some programs in the College of Education are approved by the State Board of Education (Arizona) and the National Association of School Psychologists.

ASU West. ASU West is separately accredited by the Higher Learning Commission. Professional programs in the various academic areas are accredited by national bodies as described in the "Academic Accreditation at ASU West" table, page 684.

Academic Accreditation at ASU Main and East

Unit or Program	Accredited By
College of Architecture and Environmental Design	
B.S.D., Graphic Design, Industrial Design	National Association of Schools of Art and Design
B.S.D., Interior Design	Foundation for Interior Design Education Research
B.S.L.A.	Landscape Architectural Accreditation Board
B.S.P., M.E.P.	Planning Accreditation Board
M.Arch.	National Architectural Accrediting Board
M.S.D., Design, with concentrations in graphic design and industrial design	National Association of Schools of Art and Design
W. P. Carey School of Business	
All programs	AACSB International, the Association to Advance Collegiate Schools of Business
M.H.S.A., School of Health Administration and Policy	Accrediting Commission on Education for Health Services Administration
School of Accountancy and Information Management	AACSB International, the Association to Advance Collegiate Schools of Business
College of Education	
M.C., Counseling	Council for Accreditation of Counseling and Related Educational Programs
Ph.D., Counseling Psychology; Educational Psychology, with a concentration in school psychology	American Psychological Association
College of Engineering and Applied Sciences	
B.S., Computer Science	Computer Science Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc.
B.S., Construction	American Council for Construction Education
B.S.E., Aerospace Engineering; Bioengineering; Chemical Engineering; Civil Engineering; Computer Systems Engineering; Electrical Engineering; Industrial Engineering; Materials Science and Engineering; Mechanical Engineering	Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc.
College of Law	
J.D.	American Bar Association

* This program is accredited through the ASU Main W. P. Carey School of Business.

Academic Accreditation at ASU Main and East (continued)

Unit or Program	Accredited By
College of Liberal Arts and Sciences	
B.S., Clinical Laboratory Sciences	National Accrediting Agency for Clinical Laboratory Sciences
M.S., Communication Disorders	American Speech-Language-Hearing Association
M.S., Family and Human Development, with a focus in marriage and family therapy under the family studies concentration	Commission on Accreditation for Marriage and Family Therapy Education—Candidacy Status
Ph.D., Psychology, with a concentration in clinical psychology	American Psychological Association
College of Nursing	
B.S.N., M.S., Nursing	Arizona State Board of Nursing Commission on Collegiate Nursing Education, initial approval National League for Nursing
College of Public Programs	
B.S., Recreation	Council on Accreditation of the National Recreation and Park Association
B.S.W., M.S.W., School of Social Work	Council on Social Work Education
M.P.A.	National Association of Schools of Public Affairs and Administration
Walter Cronkite School of Journalism and Mass Communication	Accrediting Council on Education in Journalism and Mass Communications
College of Technology and Applied Sciences	
B.S., Aeronautical Management Technology, with concentrations in professional flight and air transportation management	Council on Aviation Accreditation
B.S., Electronics Engineering Technology; Manufacturing Engineering Technology; Aeronautical Engineering Technology	Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc.
B.S., Industrial Technology, with concentrations in environmental technology management, graphic information technology, and industrial technology management	National Association of Industrial Technology
East College	
B.S., Business Administration*	AACSB International, the Association to Advance Collegiate Schools of Business
B.S., Nutrition (didactic program in dietetics); M.S., Nutrition (dietetic internship)	American Dietetic Association
Herberger College of Fine Arts	
Department of Theatre	National Association of Schools of Theatre
School of Music	National Association of Schools of Music

* This program is accredited through the ASU Main W. P. Carey School of Business.

Academic Accreditation at ASU West

Unit or Program	Accredited By
College of Human Services	
B.S.W., Department of Social Work	Council on Social Work Education
Department of Recreation and Tourism Management	National Recreation and Park Association/American Association for Leisure and Recreation Council on Accreditation
School of Management	
All programs	AACSB International, the Association to Advance Collegiate Schools of Business

Academic Affiliation and Membership

Unit or Program	Affiliation or Membership With
Barrett Honors College	National Collegiate Honors Council
College of Architecture and Environmental Design	
School of Architecture	American Institute of Architects, Central Arizona and Rio Salado Chapters
	Architectural Research Centers Consortium
	Association for Computer-Aided Design in Architecture
	Association of Collegiate Schools of Architecture
School of Design	American Society of Interior Designers
	Human Factors and Ergonomics Society
	Industrial Designers Society of America
	Interior Design Educators Council
	Society of Environmental Graphic Designers
School of Planning and Landscape Architecture	American Planning Association
	American Society of Landscape Architects
	Association of Collegiate Schools of Planning
	Council of Educators in Landscape Architecture
College of Education	American Association of Colleges for Teacher Education
	American Educational Research Association
	American Psychological Association
	University Council for Educational Administration
Ph.D., Educational Psychology, with a concentration in school psychology	National Association of School Psychologists
College of Law	Association of American Law Schools
College of Liberal Arts and Sciences	
Department of Anthropology	American Anthropological Association
	Council for Museum Anthropology
Biology	American Institute of Biological Sciences
	American Society of Naturalists
	American Society of Zoologists
	Animal Behaviorists' Society
	Sigma Psi
Department of Chemistry and Biochemistry	American Association for the Advancement of Science
	American Chemical Society
	American Society for Advancement of Science
Department of Geography	Association of American Geographers
Department of Geological Sciences	American Association of Petroleum Geologists
	American Geophysical Union
	American Institute of Professional Geologists
	Geological Society of America
	Mineralogical Society of America
	Society of Economic Paleontologists and Mineralogists
Department of History	American Association for State and Local History
	American Association of Museums
	American Historical Association
	Coordinating Committee for History in Arizona
	Institute of Historical Research
	National Council on Public History
	Western History Association
Department of Kinesiology	American Academy of Kinesiology and Physical Education
	American Alliance for Health, Physical Education, Recreation, and Dance
	American College of Sports Medicine
	American Society of Biomechanics
	Committee on Allied Health Education
	Council on Physical Education for Children

Academic Affiliation and Membership (continued)

Unit or Program	Affiliation or Membership With
Department of Kinesiology (continued)	International Society of Biomechanics
	National Association for Physical Education in Higher Education
	North American Society for Sports Psychology and Physical Activity
	Physiological Society
	Society for Experimental Biology
	Society for Neuroscience
Department of Languages and Literatures	American Council on Teaching Foreign Language
	International Studies Association
	Modern Language Association
Department of Mathematics and Statistics	American Mathematical Society
	Mathematical Association of America
	Rocky Mountain Mathematics Consortium
	Society for Industrial and Applied Mathematics
Microbiology	American Association of Immunologists
	American Association of Immunology
	American Society for Virology
	American Society of Microbiology
	Society for Neuroscience
Department of Military Science	Association of U.S. Army
Department of Philosophy	American Philosophical Association
Department of Physics and Astronomy	Acoustical Society of America
	American Association of Physicists in Medicine
	American Association of Physics Teachers
	American Astronomical Society
	American Crystallographic Association
	American Physical Society
	American Vacuum Society
	International Astronomical Union
	Materials Research Society
	Optical Society of America
Plant Biology	American Chemical Society
	American Institute of Biological Sciences
	American Society for Biochemistry and Molecular Biology
	American Society of Cell Biology
	American Society of Horticultural Science
	American Society for Microbiology
	American Society for Photobiology
	American Society of Plant Physiologists
	American Society of Plant Taxonomy
	Arizona-Nevada Academy of Science
	Botanical Society of America
	Botanical Society of Japan
	California Botanical Society
	Ecological Society of America
	International Association for Study of Plant Succulents
	International Association of Landscape Ecology
	International Association of Plant Taxonomy
	International Association of Wood Anatomists
	International Organization of Paleobotany
	International Photosynthesis Society
	International Phycological Society
	International Society of Arboriculture
	International Society of Ecological Modeling
	International Society of Plant Molecular Biology

Academic Affiliation and Membership (continued)

Unit or Program	Affiliation or Membership With
Plant Biology (continued)	International Society of Plant Propagators
	International Union of Woody Plant Physiologists
	Microscopy Society of America
	Mycological Society of America
	Phycological Society of America
	Phytochemical Society of North America
	Sigma Xi
	Society for Economic Botany
	Society of Ecological Restoration
	Society of Wetlands Scientists
	Soil Science Society of America
	Southwestern Association of Naturalists
Department of Political Science	American Political Science Association
	Inter-university Consortium for Political and Social Research
Department of Psychology	American Society of Clinical Psychologists
Department of Sociology	American Sociological Association
M.S., Ph.D., Molecular and Cellular Biology	American Society of Medical Technology
Women's Studies Program	Association for Women in Science
	National Women's Studies Association
College of Nursing	American Association of Colleges of Nursing
	National Organization of Nurse Practitioner Faculties
	Western Institute of Nursing
Continuing and Extended Education Programs	Arizona Nurses Association (American Nurses Credentialing Center's Commission on Accreditation)
College of Public Programs	
Department of Recreation Management and Tourism	American Humanics, Inc.
	Arizona American Indian Tourism Association
	Arizona Heritage Alliance
	Arizona Park and Recreation Association
	Arizona State Therapeutic Recreation Association
	Association for Research on Nonprofit Organizations and Voluntary Action
	Association for Volunteer Administration
	Learning Institute
	National Center for Nonprofit Boards
	National Park and Recreation Association
	National Society of Fund Raising Executives
	Nonprofit Academic Centers Council
	Peter F. Drucker Foundation for Nonprofit Management
	Society for Nonprofit Organizations
	Travel Tourism Research Association
Hugh Downs School of Human Communication	National Communication Association
	Western States Communication Association
School of Justice Studies	American Society of Criminology
	Arizona Justice Educators
	Association of Criminal Justice Doctoral Programs
	Consortium for Graduate Law and Society Programs
	Justice Studies Association
	National Academic Advising
	Onati International Institute for the Sociology of Law
	Society for the Study of Social Problems
School of Public Affairs	National Association of Schools of Public Affairs and Administration

Academic Affiliation and Membership (continued)

Unit or Program	Affiliation or Membership With
School of Social Work	Baccalaureate Program Directors Association
	Council on Social Work Education
	Group for the Advancement of Doctoral Education
	National Association of Deans and Directors of Social Work
	National Association of Social Workers
Walter Cronkite School of Journalism and Mass Communication	Association of Schools of Journalism and Mass Communication
	Broadcast Education Association
East College	American Academy of Kinesiology and Physical Education
B.S., M.S., Applied Biological Sciences	American Alliance for Health, Physical Education, Recreation and Dance
	American Association of Health Education
Department of Exercise and Wellness	American College of Sports Medicine
	Association of Worksite Health Promotion
	Committee on Allied Health Education
	Council on Physical Education for Children
	National Association for Physical Education in Higher Education
	National Strength and Conditioning Association
	National Wellness Association
	North American Society for Sports Psychology and Physical Activity
	North American Society for the Study of Obesity
Department of Nutrition	American Dietetic Association
Graduate College	Council of Graduate Schools
Herberger College of Fine Arts	
Department of Theatre	American Alliance for Theatre and Education
	Association for Theatre in Higher Education
	United States Institute of Theatre Technology
School of Music	American Music Therapy Association
Morrison School of Agribusiness and Resource Management	
B.S., Agribusiness with a concentration in professional golf management	Professional Golfer's Association of America
B.S., M.S., Environmental Resources	Society for Range Management

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Building Abbreviations

For building abbreviations used in the *General Catalog*, *Graduate Catalog*, *Schedule of Classes*, and *Summer Sessions Bulletin*, see the "Building Abbreviations" table below. For the ASU Main map, see the inside back cover. For other locations, see the "ASU East Map," page 649; "ASU West Map," page 661; and "ASU Downtown Center Map," page 679.

Building Abbreviations

Abbreviation	Name	Wings	Location
ADM	Administration	A, B	Main
ADPCM	Adelphi Commons	—	Main
AED	College of Architecture and Environmental Design/North	—	Main
AG	Agriculture Building	—	Main
AGB1–4	ASU East Agribusiness Quads 1–4	—	East
AIP	ASU East American Indian Programs	—	East
ALTCH	ASU East Altitude Chamber	—	East
ANTH	Anthropology Building	—	Main
ANX	Visual Arts Annex	—	Main
AQUAT	Mona Plummer Aquatics Center	A, B	Main
ARCH	College of Architecture and Environmental Design/South	—	Main
ARCV	University Archives	—	Main
ART	Art Building	—	Main
ARWH	Art Warehouse	—	Main
ASUDC	Downtown Center	—	502 E. Monroe St., Phoenix
BA	Business Administration Building	—	Main
BAC	Business Administration C-Wing	—	Main
BKSTR	ASU Bookstore	—	Main
CERA	Ceramics Annex	A, B	Main
CFS	Center for Family Studies	—	Main
CHAPL	Danforth Chapel	—	Main
CHOLA	Cholla Apartments	—	Main
CLCC	Classroom Laboratory/Computer Classroom Building	—	West
CLRB	ASU East Classroom Building	—	East
CMPIN	Campus Inn	—	Main
CNTR	ASU East Academic Center Building	—	East
COMM2	ASU East Communications Building	—	East
COOR	Lattie F. Coor Mediated Classroom Building	—	Main
COWDN	Cowden Family Resources Building	—	Main
CP	Central Plant	—	Main
CPCOM	Computing Commons Building	—	Main
CRI	Cancer Research Institute	—	Main
CRNX	Classroom Annex	—	West
CSAC	Nadine and Ed Carson Student Athlete Center	—	Main

Building Abbreviations (continued)

Abbreviation	Name	Wings	Location
CSB	Community Services Building	—	200 E. Curry Road, Tempe
CSC	Central Services Complex	—	West
DPSMN	Department of Public Safety	—	Main
EAW2	ASU East Exercise Instructional Lab Building	—	East
ECA	Engineering Center A-Wing	—	Main
ECANX	Engineering Center Annex	—	Main
ECB	Engineering Center B-Wing	—	Main
ECC	Engineering Center C-Wing	—	Main
ECD	Engineering Center D-Wing	—	Main
ECE	Engineering Center E-Wing	—	Main
ECF	Engineering Center F-Wing	—	Main
ECG	Engineering Center G-Wing	—	Main
ED	Hiram B. Farmer Education Building	—	Main
EDB	Ira D. Payne Education Hall	—	Main
EDC	Education Lecture Hall	—	Main
ELAB	Electronics Laboratory Building	—	West
ENGRC	Engineering Research Center	—	Main
ENVIR	Environmental Lab	—	Main
FAB	Faculty and Administration Building	—	West
FABNX	Faculty and Administration Building Annex	—	West
FAC	Nelson Fine Arts Center	—	Main
FDSC1	ASU East Agribusiness Food Science Lab	—	East
FIELD	University Field Lab	—	Main
FLHLB	Fletcher Library	—	West
GGMA	Grady Gammage Memorial Auditorium	—	Main
GHALL	Dixie Gammage Hall	—	Main
GWC	Barry M. Goldwater Center for Science and Engineering Research	—	Main
HAYDN	Hayden Hall	—	Main
HSC	ASU East Health Sciences Center	—	East
HSC2	ASU East Health Sciences Center Research	—	East
IAPNX	Interdisciplinary Arts and Performance Annex	—	West
ICA	Intercollegiate Athletics	—	Main
IRISH	Frederick M. Irish Hall	A–C	Main
LAW	John S. Armstrong Hall	—	Main
LAWLB	John J. Ross–William C. Blakley Law Library	—	Main
LIB	Charles T. Hayden Library	—	Main
LL	G. Homer Durham Language and Literature Building	—	Main
LSA	Life Sciences A-Wing	—	Main
LSC	Life Sciences C-Wing	—	Main
LSE	Life Sciences E-Wing	—	Main
LYC	Lyceum Theatre	—	Main

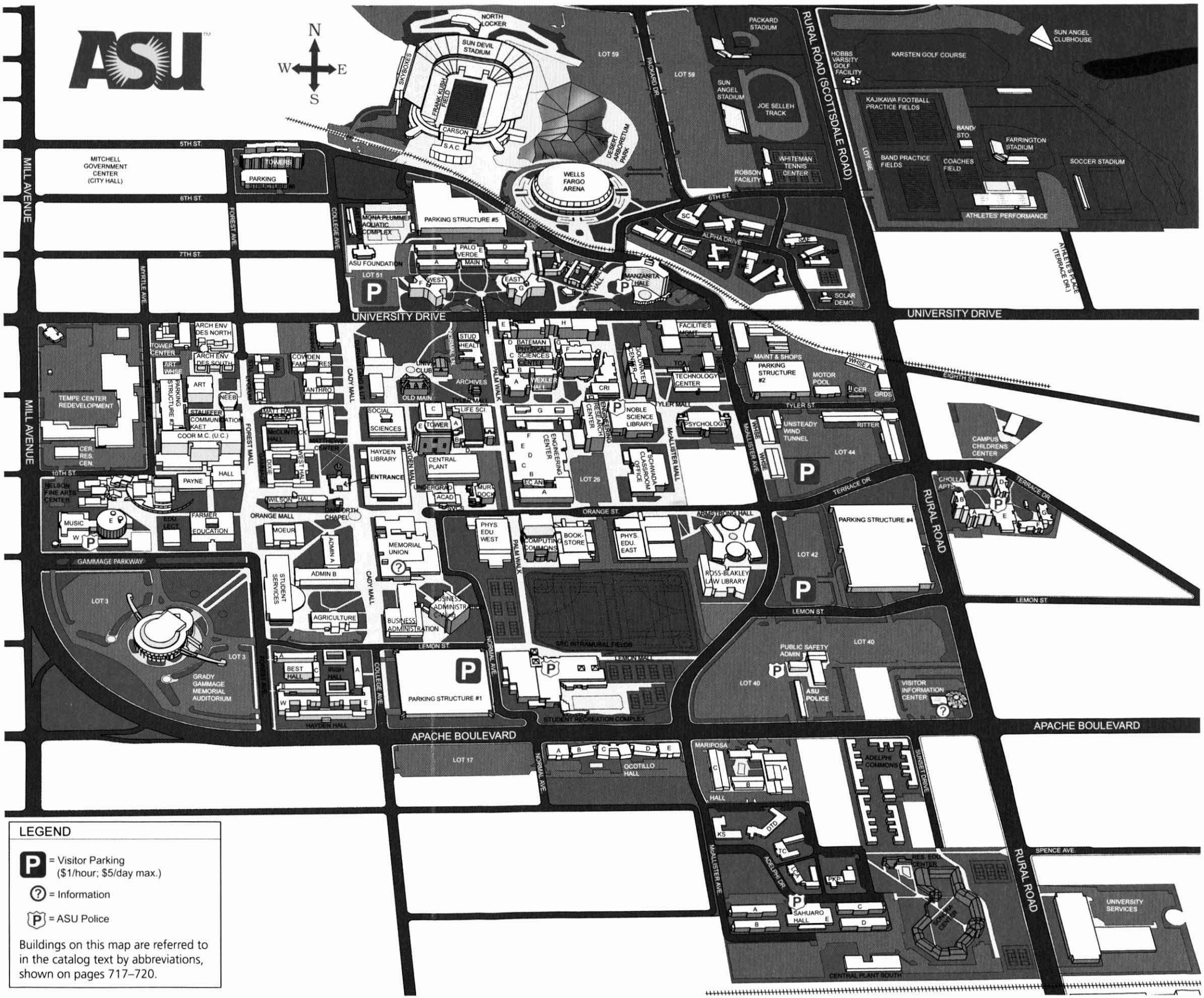
Building Abbreviations (continued)

Abbreviation	Name	Wings	Location
MAIN	Old Main	—	Main
MANZH	Manzanita Hall	—	Main
MARIP	Mariposa Hall	—	Main
MB	M.O. Best Hall	A–C	Main
MCENT	A.J. Matthews Center	—	Main
MCL	James H. McClintock Hall	—	Main
MHALL	Carrie Matthews Hall	—	Main
MOEUR	B.B. Moeur Administration	—	Main
MTCHL	Mitchell School	—	900 S. Mitchell St., Tempe
MU	Memorial Union	—	Main
MUR	John Murdock Lecture Hall	—	Main
MUSIC	Music Building	E, W	Main
NEEB	L.S. Neeb Hall	—	Main
NOBLE	Daniel E. Noble Science and Engineering Library	—	Main
NUR	Nursing Building	—	Main
OCOT	Ocotillo Hall	—	Main
PABLO	San Pablo Residence Hall	—	Main
PAC	ASU East Physical Activity Center	—	East
PBS	Packard Baseball Stadium	—	Main
PEBE	Physical Education Building East	—	Main
PEBW	Physical Education Building West	—	Main
PGM	ASU East Professional Golf Management	—	East
PPS	Facilities Management	—	Main
PRNT	ASU East Technology Print Building	—	East
PS	George M. Bateman Physical Sciences Center	A–G	Main
PSH	Physical Sciences H-Wing	—	Main
PSY	Psychology Building	—	Main
PVE	Palo Verde East Hall	—	Main
PVM	Palo Verde Main Hall	—	Main
PVW	Palo Verde West Hall	—	Main
RITT	Ritter Building	A, B	Main
SAHU	Sahuaro Hall	—	Main
SANDS	Sands Classroom Building	—	West
SCOB	John W. Schwada Classroom Office Building	—	Main
SCRED	Sonora Center Residence Education Center	—	Main
SDF	Solar Demonstration Facility	—	Main
SHS	Student Health Service	A, B	Main
SIM	ASU East Flight Simulator Building	—	East
SOLAR	ASU East Photovoltaics Testing Laboratory	—	East
SRC	Student Recreation Complex	—	Main
SS	Social Sciences Building	—	Main

Building Abbreviations (continued)

Abbreviation	Name	Wings	Location
SSV	Student Services Building	—	Main
STAD	Sun Devil Stadium	—	Main
STAUF	Charles Stauffer Communication Arts Building	A, B	Main
TC	Technology Center	—	Main
TCB	Aeronautics Building	—	Main
TCC	Technology Center Annex	—	Main
TECH	ASU East Technology Center	—	East
TECH2	ASU East Technology Center Annex	—	East
THWH	Theatre Warehouse	—	Main
TMPCT	Tempe Center	—	929 (Suite 150) and 951 (Suite 190) S. Mill Ave., Tempe
TOWER	Tower Center*	A, B	Main
TRACK	Joe Selleh Track	—	Main
UASB	Undergraduate Academic Services Building	—	Main
UCB	University Center Building	—	West
UCLUB	University Club	—	Main
UNION	ASU East Williams Campus Union Building	—	East
USB	University Services Building	—	1551 S. Rural Road, Tempe
UVCMN	University Commons	—	Main
UWT	Unsteady Wind Tunnel	—	Main
VISIT	ASU Visitor's Information Center	—	Main
WFA	Wells Fargo Arena	—	Main
WFLD	ASU West Alternate Locations	—	West
WH	Warehouse	—	Main
WHALL	West Hall	—	Main
WIC	Welcome and Information Center	—	West
WILSN	George W. Wilson Hall	—	Main
WTC	Whiteman Tennis Center	—	Main

* The Tower Center is different from University Towers, 525 S. Forest Ave., which has no official building abbreviation.



LEGEND

P = Visitor Parking ($1/hour; $5/day max.)

? = Information

P = ASU Police

Buildings on this map are referred to in the catalog text by abbreviations, shown on pages 717–720.

Front Cover
(Clockwise from left)
The fountains near Business Administration C-Wing are a favorite place to study. The W. P. Carey School of Business is ranked 25th in the United States among all undergraduate programs, according to *U.S. News & World Report*.
(photo by Mark Boisclaire)
Students study at one of 13 residence halls.
(photo by Dave Tevis)
Old Main
(photo by Mark Boisclaire)
Sidnee and her parents enjoy an Orientation, Advisement, and Registration Program.
(photo by Dave Tevis)

Back Cover
(From left)
Adeline walks along one of the many campus malls on her way to class.
(photo by Jeff Noble)
Student volunteers assist new students at Ask Me booths during Sun Devil 101, ASU's Welcome Week.
(photo by Dave Tevis)
Grady Gammage Memorial Auditorium, designed by Frank Lloyd Wright, is one of ASU's signature buildings.
(photo by Mark Boisclaire)

Inside Flap
(From left, all *photos by Dave Tevis*)
Students take a recreation break at Tempe Town Lake.
A diverse student body takes classes in subjects that range from accountancy to zoology.
San Pablo, the newest ASU residence hall

ASU

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