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ASU East

See "ASU East Administrative Personnel," page 667

ASU Extended Campus

See "ASU Extended Campus Administrative Personnel," page 691.

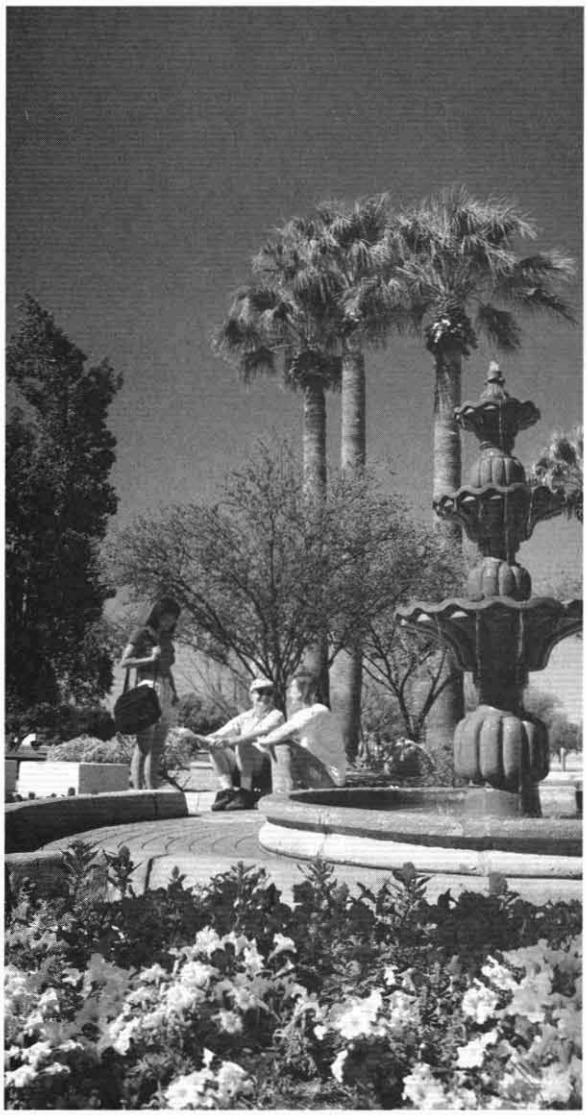
ASU West

See "ASU West Administrative Personnel," page 682

ASU East

Charles E. Backus, Ph.D., Campus Chief Executive Officer and Provost, ASU East; Vice President, ASU

www.east.asu.edu



ASU East Student Union fountain

Dave Trevis photo

Arizona State University East was established in 1996 at the former Williams Air Force Base, 23 miles southeast of ASU Main. There, ASU East and its educational partners have created the Williams Campus a residential academic community focused on meeting the needs of students, business, industry, and the larger community. The 600 acre Williams Campus offers a small college environment, with access to the amenities of a major metropolitan area and the resources of a major research university.

ASU East offers degree programs that help students develop knowledge and skills they need for success in their professional, civic, and personal lives in the 21st century. Eighteen baccalaureate degree programs, five master's degree programs, and two certificate programs can be completed at ASU East, with additional programs in the planning stages. (See the "Morrison School of Agribusiness and Resource Management Baccalaureate Degrees and Majors" table, page 608, the "East College Baccalaureate Degrees and Majors" table, page 621, and the "College of Technology and Applied Sciences Baccalaureate Degrees and Majors" table, page 634.) The College of Technology and Applied Sciences offers a master's degree and a range of bachelor's programs in high demand areas of technology, the only programs of their kind in Arizona. The unique bachelor's and master's degrees in Agribusiness offered by the faculty in the Morrison School of Agribusiness and Resource Management lead to careers in one of the fastest growing sectors of global business. The Environmental Resources degrees offered through the Morrison School provide opportunities to study wilderness areas and urban habitats and how people's activities affect the regenerative ability of natural resources East College offers a range of supporting courses for all ASU East programs and bachelor's degrees with majors in Business Administration, Applied Psychology, Nutrition, Elementary Education, Multimedia Writing and Technical Communication, Exercise and Wellness, and Interdisciplinary Studies Students who are uncertain of their major may start college at ASU East as East College/No Preference majors.

Although it is a young campus, ASU East has already developed significant student centered innovations in higher education that have earned national recognition.

ASU East assumed leadership in Arizona in developing and offering the Bachelor of Applied Science (B A.S) degree, a program designed specifically as a career progression degree for students holding the Associate of Applied Science (A.A.S.) degree The B.A S emphasizes management, leadership, and communication skills, along with additional technical course work.

ASU East has also developed an innovative academic partnership with Chandler Gilbert Community College (CGCC . This partnership combines the strengths of the two institutions to provide ASU students with high quality education in a cost effective way CGCC provides lower division general education and major prerequisite courses that are directly equivalent to ASU courses and transfer automatically ASU East provides both lower- and upper division courses in the major and upper division general studies and general interest courses. Through the partnership, students can get at the Williams Campus all the courses needed to graduate in four years with an ASU baccalaureate degree, generally at some savings in tuition.

New facilities, new programs, and new opportunities are constantly emerging at ASU East. The campus is easily accessible via major interstate routes. See the map on page 661 For the latest information, call 480 727 EAST (3278 or access the Web site at www.east.asu.edu.

Accreditation

The North Central Association of Colleges and Schools accreditation of ASU Main includes ASU East In addition, ASU East 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. (TAC of ABET) For more information, call 410 347 7700 or write

TECHNOLOGY ACCREDITAT ON COMM SS ON
OF THE ACCRED TAT ON BOARD FOR
ENGINEERING AND TECHNOLOGY INC
111 MARKET PLACE SUITE 1050
BALTIMORE MD 21202-7102

Both the airway science flight management and the airway science management concentration, in the Department of Aeronautical Management Technology, are fully accredited by the Council on Aviation Accreditation For more information call 334 844 2431, e-mail caa@auburn.edu, or write

COUNCIL ON AVIAT ON ACCRED TATION
3410 SKYWAY DR VE
AUBURN AL 36830

ACADEMIC ORGANIZATION AND ADMINISTRATION

The chief operating and academic officer of ASU East is the provost. There are two colleges and one school at ASU East administered by deans. These academic units develop and implement the teaching, research, and service programs of the institution. Additional support for the academic mission of the campus is provided by Library Services and Information Technology, each administered by a director. See "ASU East Faculty and Academic Professionals," page 663, and "Academic Organization," page 8

ADMISSION

Nondegree Students. Nondegree students may take courses at ASU East according to the special provisions under "Admission of Undergraduate Nondegree Applicants," page 60.

Degree-Seeking Students. Degree seeking students must meet the university admissions standards set by the Arizona Board of Regents (ABOR) Any student admitted to ASU may take courses at ASU East To be admitted to an ASU East degree program, the student must meet undergraduate admissions requirements and the specific admiss on requirements of the ASU East program A student who is admitted to an ASU East degree program is defined as an ASU East student.

For more admissions information and applications to ASU East degree programs, call 480 727 EAST (3278 or write

UNDERGRADUATE ADMISS ONS
AR ZONA STATE UNIVERSITY
PO BOX 870112
TEMPE AZ 85287 0112

Academic Advising at ASU East

College or School	Location	Telephone	Days	Hours
College of Technology and Applied Sciences	CNTR 10	480 727 1252	Mon. Fri.	8 A.M. 5 P.M.
Craig and Barbara Barrett Honors College	IRISH A121[2]	480/965 2359	Mon. Fri.	8 A.M.–5 P.M.
East College	CNTR 92	480 727 1515	Mon Fri.	8 A.M. 5 P.M.
Department of Nutrition	HSC 1345	480/727-1728	Tues., Thurs.	9 A.M. 5 P.M.
Morrison School of Agribusiness and Resource Management	CNTR 20	480 727 1585	Mon. Fri.	8 A.M. 5 P.M.

[1] Walk ins are welcome, appointments are recommended

[2] The Barrett Honors College is located at ASU Main.

Transfer Among ASU Campuses

Degree seeking students currently enrolled at either ASU Main or ASU West who want to relocate to an ASU East degree program should contact the OASIS at ASU East, the Office of the Registrar at ASU Main, or the Admissions and Records Office at ASU West for appropriate procedures. All credit earned at any ASU campus automatically transfers to ASU East. Students should consult with their ASU East major advisor to determine how this credit applies to their major and graduation requirements. Students should be aware that certain requirements (e.g., the minimum number of upper division semester hours to graduate may differ among campuses.

TRANSFER CREDIT

Courses taken from Chandler Gilbert Community College through the Partnership in Baccalaureate Education are automatically transferred to ASU East each semester. These courses and courses taken at other Arizona public community colleges transfer according to equivalencies established in the current Arizona Higher Education Course Equivalence Guide. (Transfer guides are available at www.asu.edu/provost/articulation. The acceptability and applicability of courses transferred from other universities and community colleges is determined by ASU Main Undergraduate Admissions in consultation with the faculty or academic advisor of the student's choice of major.

JOINT ADMISSION CONTINUOUS ENROLLMENT (JAC)

JAC 001 Joint Admission Continuous Enrollment. 0–12 F, S, SS. For use by ASU East to track undergraduate students admitted to East Campus degree programs who are concurrently enrolled or soley enrolled in courses offered by Chandler Gilbert Community College.

ADVISING

Students are encouraged to take advantage of the skill and knowledge of the advising professionals available to them in the academic units and to seek academic advising early.

For more information or to schedule an advising session, contact an academic advisor (see the "Academic Advising at ASU East" table, page 605)

ASU EXTENDED CAMPUS

The College of Extended Education was created in 1990 to extend the resources of ASU throughout Maricopa County, the state, and the region. 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.

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 683, or access the Web site at www.asu.edu/xed.

CAMPUS AND STUDENT SERVICES

ASU East is a student centered campus that offers many of the features of a small residential college in a rural area while providing access to the resources of a major research university and the amenities of a large metropolitan area. The campus includes excellent educational facilities: modern classrooms and laboratories, a 21st century electronic library, and state of the art computer equipment. Other amenities include a learning center, child care services, campus union, bookstore, copy center, and free parking. A shuttle service provides transportation between ASU East, Mesa Community College, and ASU Main. An additional shuttle is available for transportation from ASU Main to ASU West.

Enrollment Services—OASIS

The OASIS provides one stop services for admission, financial aid, business services, and registration. Conveniently located in the Academic Center Building, students find personnel ready to assist them with registration processes, tuition payment, financial assistance information, student employment, ASU Sun Cards (photo IDs), and parking information.

Student Affairs

Staff provide new student advising orientation programs, workshops, academic advising for undeclared majors, support for clubs and organizations, international and multicultural students, and students with disabilities. Staff also provide career advising and assessment, career planning workshops, career exploration software programs, and internship information.

Williams Campus Housing and Residential Life

Living on campus at ASU East provides students with the best opportunity to make the most of their college experience. No matter which housing option students choose, the residential life program offers social, academic, and recreational activities that are designed to support and enrich the

student's campus ife experience Residentia students bene fit from easy access to campus resources such as the library, learning center fitness center and campus union, and park ing is available for res dents at no extra cost

ASU East's unique residential environment offers housin_ options for Wi liams Campus students throughout their under graduate and graduate education. Th s includes res dence halls, houses, and special residential con munities Residential students can also take advantage of such amen ties as outdoor swimming, sand volleybal , tennis, and picnic areas.

Freshman Year Experience Residence Hall. Freshmei can begin their on campus living experience in a ded cated freshman residence hall that incl ides the Freshman Year Experience (FYE) program. The FYE program helps fresh men achieve academic and personal success by provi ding on-site tutoring and advising, as we l as enhanced opportu nities for student learning can pus involvement and out of class interaction with faculty. Research has consistently shown that freshmen participating in livi ng learning com munities, such as FYE, have greater academic success The FYE residence hall offers two bedroom suites w th a shared bath, to house four students Each ha also features a com puter lab, study area, and community lounge. An optional meal plan is offered through campus dining

Residence Halls. Undergraduate and graduate students are eligible for residence halls with a large pr vate room, featur ing a private bath and a shared kitchenette. Students may, if they prefer, elect to share a room with another student. Each room includes basic furnishings, the kitchenette includes a refrigerator and microwave.

Houses. A large number of two to five bedroom houses are available for students with famil es or for groups of single undergraduate or graduate students Each house includes basic furn shings.

Special residential communities. Special res dential com munities for honors students, students in particular aca demic majors, and students sharing common interest areas are also availab e.

All residential facilities are non smoking For more infor mation, call the Wil iams Campus Housing Office at 480 727 1700, or access the Web site at www.asu.edu/east/cls housing

Library Services

Strong resources and personal service def ne the ASU East Library. As a primarily e ectronic research library, it is designed to take maximum advantage of new technology Electronic indexes, cataloos, and journals support study and research in many fields, with an emphasis on the majors offered at ASU East. While the library acquires materials in all formats, by intention it prefers electronic text. Thousands of periodicals are available digitally in all subjects, while those that remain in print form can be obtained by the library quickly. Documents in electronic form can be deliv ered directly to students' computers Librarians and staff pursue service customized to indiv dual students needs, cultivating a smal college atmosphere The library's Web address is eastlib.east.asu.edu.

Computing Services

With more than 200 wc rkstations in five classrooms and a Computing Commons, nformation Technology at ASU East provides genera computing services, including e mail and general purp se computing The IT East department provides specialized software and systems to meet the par ticular needs of the ASU East programs. In addition, IT East provides mediated classro oms and audiovisual material to support e earning initiatives IT East has a staff of support personnel to aid the camp is community's diverse comput in_ needs, including Web development

Williams Campus Union

The Campus Union is the center of the campus commu nity, serving students, faculty, staff, and guests. Union facil ities include meeting and study rooms, a ballroom, TV lounge and a game room. Programs and services such as movie nights, ice cream socials, dances, and holiday parties complement the educational mission of the Williams Cam pus and enhance the quality of campus life The union is staffed primar ly by students, providing them the opportu n ty to develop leadership ski ls and a customer service ori entation For more information, call 480 727 1098

Learning Center

In the Learning Center, undergraduate and graduate stu dents can study, conduct research and access writing assis tance, subject area tutoring, and computer assisted instruc tion Staff members also provide workshops and in class presentations on writing presentation, and study skills. Located in the Ac demic Center Building, the Learning Center offers a convenient and quiet study location for indi vidual students and study groups. Leisure reading is encour aged by offering recycled paperback books and magazines to borrow and comfortable furnishings in which to relax All Learning Center services are free to enrolled students For more information or to schedule a tutoring appointn ent, call 480 727 1452

Recreational Facilities and Services

The Williams Campus Fitness Center is equipped with state of the art weight training and cardiovascular machines, racquetball courts, and a gymnasium Trained exercise professiona s are on hand daily to provide personal training assistance A variety of health, fitness, and sports classes are also offered at the Fitness Center. For students who prefer outdoor sports activities, the campus has basket ball and tenn s courts, soccer football fields, baseball fields, a running track, and swimming poo For more information, call 480 988 8400

Student Health Services

Health services for ASU East students are provided by the Veteran's Administration Medical Center located at the Williams Campus Services include primary assessment and treatment of h ealth problems and injuries, physical examinations and immunizations, women's health care, diagnostic tests, laboratory tests X rays, and a pharmacy. Health education and counselin_, smoking cessation counseling, and wellness and health assessments are also available Student registration fees cover the cost of office visits for full time ASU East students Part t n e students pay a nominal fee. Some off ~e procedures and laboratory tests require addi t onal charges. Hea th insurance is not required to use the health services, however, t is strongly advised for all stu dents and is required for international students For more information, call 602 222 6568

Morrison School of Agribusiness and Resource Management

Raymond A. Marquardt, Dean

www.east.asu.edu/msabr

PURPOSE

The Morrison School of Agribusiness and Resource Man agement provides academic programs in Agribusiness and in Environmental Resources. Agribusiness is the business of food and fiber production and the technology necessary to change a raw material (a commodity) or an idea into a new product or business for the world's consumers. Producing, financing, marketing, and providing food and fiber for the world amounts to more than one half of the earth's global economy.

Agribusiness courses in the Morrison School are designed to prepare students for a wide range of job oppor tunities in agribusiness and business. More than 20 percent of all jobs in the United States are agribusiness-related, and the industry is even more important internationally, with more than half of all jobs in developing countries related to food and fiber products. Population increases worldwide have led forecasters to predict that more than nine billion food and fiber consumers will be part of the global agribusi ness system by the year 2050 Forecasts also estimate that, at that time, more than 20,000 agribusiness jobs will go unfilled due to a lack of skilled professionals.

The academic programs in Agribusiness are especially designed to meet the needs of the urban student who has lit tle or no previous agriculture experience An interest in plants, animals, or food can be the starting point for career development in agricultural industries or resource manage ment. The undergraduate programs also provide the neces sary training for students preparing to enter graduate degree programs

The Morrison School is strategically positioned to offer some unique programs The concentration in professional golf management provides a student with the opportunity to qualify for the Professional Golf Association certification program in addition to majoring in Agribusiness. Similarly, for individuals more interested in the development and man agement of golf and other turf facilities, the golf and facili ties management concentration is well suited

Food, its marketing and safety, is a paramount importance now and in the future. The Morrison School offers specific concentrations in both of these areas Food and agribusiness marketing is one of the signature concentrations in the school. Food science and safety are emphases stressed in the food and agribusiness marketing concentration.

For students interested in natura resource management, the school offers a major in Environmental Resources. Envi ronmental resources is a science that applies across the eco ogical continuum of wilderness areas and urban lands Stu dents learn not only about wildlands but also about urban habitats and how people's activities affect the regenerative ability of natural resources The Environmental Resources curriculum provides the opportunity to develop technologi cal skills such as remote sensing of data from aircraft or sat ellites, computer-based Geographic Information Systems, and techniques for ecological restoration

Graduates of the Environmental Resources programs have employment opportunities in environmental resource management, applied ecology, wildlife biology, soil and water conservation, and land reclamation in both private firms and government agencies.

NATIONAL FOOD AND AGRICULTURAL POLICY PROJECT

The National Food and Agricultural Policy Project (NFAPP) constructs a 10 year baseline forecast for the fruit and vegetable produce industry and specific commodities, responds to congressional inquiries concerning policies affecting the fruit and vegetable industry, and publishes a monthly newsletter highlighting research efforts. Areas of study include domestic and international promotion of fruits and vegetables, trade and the impact of trade agreements, and crop insurance and risk management. For more infor mation, call the director at 480/727-1124

DEGREES

See the "Morrison School of Agribusiness and Resource Management Baccalaureate Degrees and Majors" table, page 608. For graduate degrees, see the "Morrison School of Agribusiness and Resource Management Graduate Degrees and Majors" table, page 609.

The Morrison School of Agribusiness and Resource Man agement offers two B.S. degrees: Agribusiness and Environ mental Resources. Students interested in the Agribusiness major may select from the following concentrations: agri business finance, food and agribusiness marketing, food sci ence, general agribusiness, golf and facilities management, international agribusiness, management of agribusiness, professional golf management, resource management, e-commerce, and preveterinary medicine The Environmen tal Resources major offers concentrations in ecology, water shed ecology, and wildlife habitat management.

For students holding an A A S. degree, the school offers the Bachelor of Applied Science degree with concentrations in consumer products technology, food retailing, and resource team specialist

The school offers the M S. degree in Agribusiness and the M.S. degree in Environmental Resources. Agribusiness stu dents may select either a research oriented program which leads to the completion of a supervised thesis, or a program consisting of course work only (nonthesis option) All M S candidates in Agribusiness must complete a minimum of 36 semester hours Students in the Environmental Resources

Morrison School of Agribusiness and Resource Management Baccalaureate Degrees and Majors

Major	Degree	Concentration	Administered By
Agribusiness	B.S.	Agribusiness finance, e commerce, food and agribusiness marketing, food science, general agribusiness, golf and facilities management, international agribusiness, management of agribusiness, preveterinary medicine, professional golf management, resource management	Morrison School of Agribusiness and Resource Management
Applied Science	B.A S.	Consumer products technology, food retailing, resource team specialist	Morrison School of Agribusiness and Resource Management
Environmental Resources	B.S.	Ecology, watershed ecology, wildlife habitat management	Morrison School of Agribusiness and Resource Management

degree program may study natural resource management, Geographic Information System/remote sensing, and animal plant ecology All M S. cand dates in Environmental Resources must complete 30 semester hours of approved graduate work See the *Graduate Catal g* for more information

ADMISSION

The Morrison School of Agribusiness and Resource Management admits students to the B S. degree programs who meet the undergraduate admission requirements of Arizona State University; see "Undergraduate Admission," page 54 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 2.50 for nonresident applicants.

GRADUATION REQUIREMENTS

Agribusiness—B.S.

The completion of a minimum of 120 semester hours including First Year Composition, General Studies "General Studies," page 78 , and the school and concentration requirements leads to the B S degree. Note that all three General Studies awareness areas are required. An overall GPA of 2 00 is required for graduation and students must have completed a minimum of 45 semester hours of upper division credit Also see special graduation requirements under "Preveterinary Medicine," page 611

B.S. Agribusiness Prerequisite Courses

Students who select the concentrations in agribusiness finance, food and agribusiness marketing, food science, general agribusiness, golf and facilities management, international agribusiness, management of agribusiness, or professional golf n anagement must complete the following courses, some of which can also be used to meet university General Studies requirements.

ACC	230	Uses of Accounting Information I . . 3
ACC	240	Uses of Accounti g Information II 3
BIO	100	The Living World *SQ* .. 4
CHM	101	Introductory Chemistry *SQ* 4
ECN	111	Macroeconomic Principles *SB*[2] 3
ECN	112	Microeconomic Principles . . 3
ENG	301	Writing for the Professions *L*. 3
MAT	210	Brief Calculus *MA* 3
Total		..26

This course is not required for the professional golf management concentration

[2] This course is not required for the golf and facilities management concentration.

Core Requirements. Agribusiness employers require their employees to possess a greater range of skills and competencies than at any time in the past Rapid changes in information technology and the increasingly competitive food production and distribution sector mean that agribusiness needs graduates adequately equipped to deal with the business applications of these changes. The agribusiness core, required of all the concentrations, is designed to prepare students with a core set of skills that these firms demand The core consists of courses in business principles management, marketing, and finance as well as in the fundamentals of agribusiness operations management.

AGB	100	Introduction to Agribusiness .. 3
AGB	161	Computer Applications in Agribusiness. .. 3
AGB	310	Agribusiness Management I .. 3
AGB	320	Agribusiness Marketing I 3
AGB	321	Agribusiness Marketing II* 3
AGB	332	Agribusiness Finance I .. .3
AGB	333	Agribusiness Finance II.. .. 3
AGB	360	Agribusiness Statistics *CS* . .. 3
AGB	364	Agribusiness Technologies I* 3
AGB	365	Agribusiness Technologies II 3
AGB	410	Agribusiness Management II 3
AGB	414	Agribusiness Analysis *L* 3
Core total ..		.. 36

* This course is not required for the professional golf management or golf and facilities management concentrations

Concentrations

After completing the required agribusiness core, students select a concentration in their area of interest A concentration allows a student to select a series of courses that complement the agribusiness core, supplement the student's desire to master another area of interest, and broaden career opportunities.

Morrison School of Agribusiness and Resource Management Graduate Degrees and Majors

Major	Degree	Concentration	Administered By
Agribusiness	M S	Agribusiness management and marketing, food quality assurance	Morrison School of Agribusiness and Resource Management
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, and range ecology	Morrison School of Agribusiness and Resource Management

Doctoral courses for these interdisciplinary programs administered by ASU Main are also offered at ASU East.

E-commerce Concentration. The extraordinary growth of e-commerce in the business and agribusiness venues provides significant opportunities for students prepared to work in this medium. A student following this concentration builds upon the prerequisite core and the agribusiness core to prepare for this field. The opportunities for personal development, advancement, and success are present domestically and internationally

E-commerce

AGB 436 Entrepreneurship in Financial Management of E Commerce	3
AGB 463 Electronic Commerce in Agribusiness	3
AGB electives	8
Agribusiness core	36
Agribusiness prerequisite courses	26
Website design course	3
Total	79

Agribusiness Finance Concentration. Agribusiness finance concentration graduates are expected to possess a broad knowledge of financial theory and practice as it pertains to the agribusiness sector This will involve applying quantitative and computer based analytical techniques to real world agribusiness problems. Specific course content includes topics in financial management, financial markets, risk management, and the evaluation of financial assets and business alternatives.

Agribusiness Finance

AGB 334 Agricultural Commodities	3
AGB 431 Intermediate Agribusiness Financial Management	3
AGB 434 Agricultural Risk Management and Insurance	3
AGB electives	8
Agribusiness core	36
Agribusiness prerequisite courses	26
Total	79

Management of Agribusiness Concentration. Agribusiness managers encounter many problems and opportunities on a daily basis that are unique to the agribusiness sector. Students choosing this concentration develop skills in managing people, internal resources, and external relationships in an increasingly dynamic environment.

Management of Agribusiness

AGB 351 Management Science *CS*	3
AGB 380 Applied Microeconomics	3
AGB 411 Agricultural Cooperatives or AGB 480 Agribusiness Policy and Government Regulations (3	3
AGB electives	8
Agribusiness core	36
Agribusiness prerequisite courses	26
Total	79

Food and Agribusiness Marketing Concentration. Students in the food and agribusiness marketing concentration develop critical skills relevant to dealing with firms involved in food, fiber, consumer products, and pharmaceutical manufacturing, distribution; and retailing Students also learn about the relationship between input suppliers, commodity associations, and primary producers. To this end, food and agribusiness marketing students are required to complete a series of courses that analyze the behavior and performance of both commodity and consumer food markets.

Food and Agribusiness Marketing

AGB 334 Agricultural Commodities or AGB 420 Food Marketing (3	3
AGB 422 Consumer Behavior	3
AGB 429 Marketing Research	3
AGB electives	8
Agribusiness core	36
Agribusiness prerequisite courses	26
Total	79

Food Science Concentration. The food science concentration focuses on both scientific and technical competency skills with an emphasis on food microbiology, food chemistry, biotechnology, mathematics, and statistics This unique program prepares graduates for employment opportunities in the food, beverage, and dairy industries; regulatory agencies such as the FDA and USDA; international organizations such as FAO and WHO, and consumer organizations. In addition, graduates may choose to pursue advanced degrees.

Food Science

AGB 340 Food Processing	3
AGB 440 Food Safety	3
AGB 442 Food and Industrial Microbiology	4
AGB upper division electives	7
Agribusiness core	36
Agribusiness prerequisite courses	26
Total	79

NOTE: For the General Studies requirement, courses and codes such as L SQ C and H) see "General Studies" page 78 For graduation requirements see University Graduation Requirements," page 74 For an explanation of additional omnibus courses offered but not listed in this catalog, see Classification of Courses, page 51

General Agribusiness Concentration. The general agribusiness concentration offers students a chance to build a broad perspective in the field of agribusiness. In an age of specialization, there remains a growing need for generalists. These individuals have mastered finance, marketing, management, and other technologies such as computers and statistics and are capable of demonstrating this mastery.

General Agribusiness

AGB 334 Agricultural Commodities	3
AGB electives	14
Agribusiness core	36
Agribusiness prerequisite courses	26
Total	79

International Agribusiness Concentration. A student studying international agribusiness is typically preparing for a career with government agencies oriented toward international issues; programs of agribusiness for or in developing countries; U.S. agribusiness firms affected significantly by trade; or U.S.-based international agribusiness firms.

This concentration requires a mastery of subjects in international trade, agricultural development, international policy, and global marketing practices and institutions.

International Agribusiness

AGB 411 International Agricultural Development	3
AGB 452 International Agricultural Policy	3
AGB 454 International Trade	3
AGB electives	8
Agribusiness core	36
Agribusiness prerequisite courses	26
Total	79

Professional Golf Management Concentration. The Professional Golf Management (PGM) concentration, accredited by the Professional Golfer's Association of America, is specifically designed for students who aspire to become Class A PGA Professionals and work in management careers in the golf industry. PGM students complete the agribusiness core, which helps them develop the critical skills needed to manage complex organizations. In addition, the PGM concentration requires a minimum of 23 semester hours of golf related curriculum, of which nine hours consist of hands on internship experience at golf facilities. The remaining 14 semester hours include courses selected from the following areas: golf course operations, turf grass management, club fitting and repair, pro shop merchandising, movement analysis, sports psychology and equipment, mechanics and shop maintenance and repair. Students must also complete the majority of requirements in the PGA Golf Professional Training Program, including the PGA Playing Ability Test. All golf related courses and internships are selected with the assistance of the PGM program director.

PGM Admission. To be admitted to the PGM program, students must meet a playing ability test. Call the PGM director at 480 727 1017 for more information.

Professional Golf Management

Agribusiness core	30
Agribusiness prerequisite courses	22
Professional golf management course	14
Professional golf management internship	9
Total	75

Golf and Facilities Management Concentration. The Golf and Facilities Management (GFM) concentration is designed to prepare students to pursue careers as golf course superintendents. Through the agribusiness core, students develop the critical skills needed to manage complex organizations. In addition, the GFM concentration requires a minimum of 25 semester hours of golf and facilities management related curriculum, of which six hours consist of hands on internship experience at golf courses. The remaining 19 semester hours include courses selected from the following areas: golf course operations, plants and landscaping, soils, irrigation and water management, fertilizers, pest control, turf grass management, mechanics and shop maintenance and repair. The GFM concentration also requires the student to complete six semester hours of internship experience at golf facilities, providing valuable hands on experience. Call the GFM program coordinator at 480 727 1256 for additional information.

Golf and Facilities Management

Agribusiness core	30
Agribusiness prerequisite courses	23
Golf and facilities management courses	19
Internship	6
Total	78

Prerequisite Courses for Preveterinary Medicine and Resource Management. Students who select the preveterinary medicine and resource management concentrations must take the following courses, some of which can also be used to meet the General Studies requirement.

ACC 230 Uses of Accounting Information I	3
BCH 361 Principles of Biochemistry	3
BIO 181 General Biology *SQ*	4
BIO 182 General Biology *SG*	4
BIO 340 General Genetics	4
CHM 113 General Chemistry *SQ*	4
CHM 115 General Chemistry with Qualitative Analysis *SQ*	5
Choose between the course combinations below	4–8
CHM 231 Elementary Organic Chemistry *SQ* 3	
CHM 235 Elementary Organic Chemistry Laboratory *SQ* (1)[1]	
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)	
ECN 11_ Microeconomic Principles *SB*	3
ENG 301 Writing for the Professions *L*	3
MAT 211 Brief Calculus *M4*	3
MIC 205 Microbiology *SG*[2]	3
MIC 206 Microbiology Laboratory *SG*[2]	1
PHY 111 General Physics *SQ*[3]	3
PHY 113 General Physics Laboratory *SQ*[3]	1
Upper division AGB, BIO, or ERS	6
Total	54–58

[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.

[3] Both PHY 111 and 113 must be taken to secure SQ credit.

Preveterinary Medicine. A student studying agribusiness could also be preparing for admission to a professional veterinary school. While completing the courses needed for acceptance into veterinary school, the student is broadening his or her career potential with agribusiness courses. The major reason for the lack of success as a professional veterinarian is rarely bad medicine or science. It is often a lack of knowledge of how to run a business or practice. In addition, should a preveterinary student decide not to apply to a veterinary school, this major provides alternative career paths into human or veterinary pharmaceutical industries or the food industry. Selection of this concentration permits students to complete the preveterinary requirements for entrance to professional veterinary school. The curriculum permits the student to obtain some course work in agribusiness as it relates to professional practice and industry.

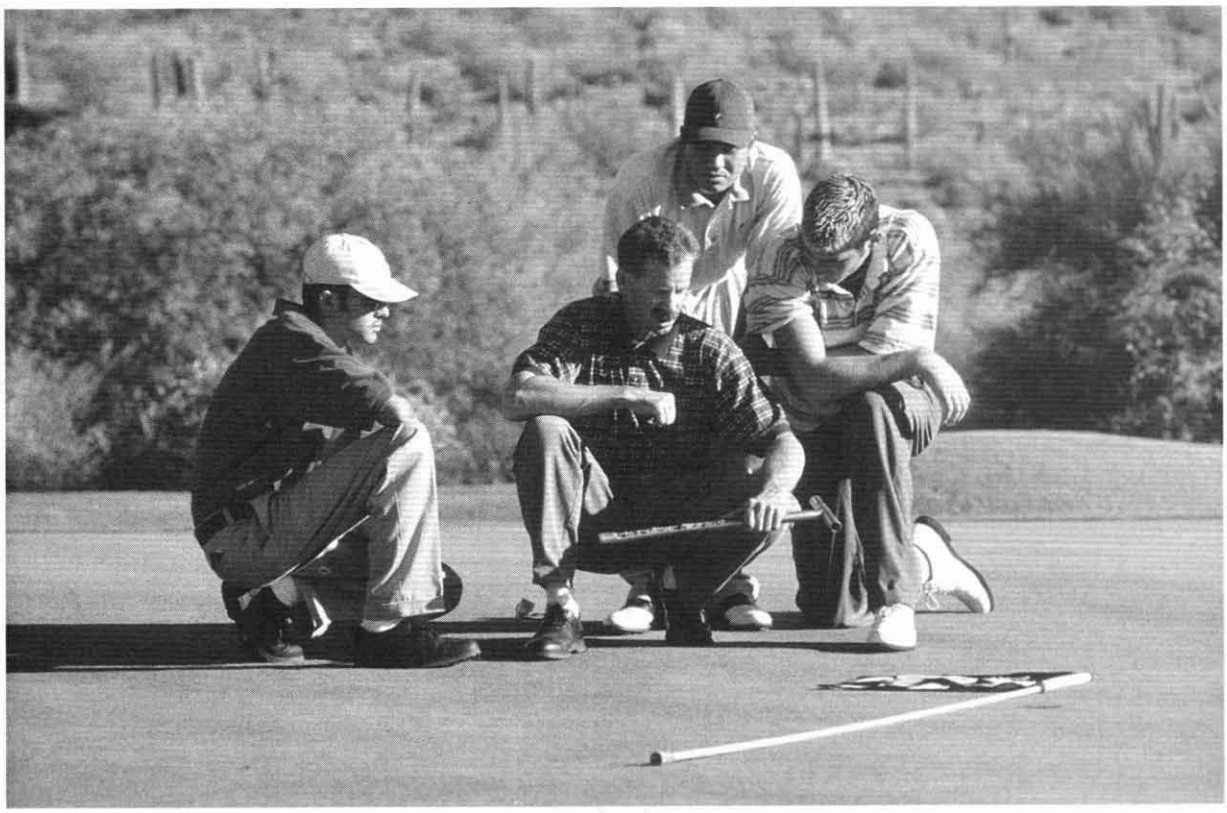
Preveterinary Medicine

Agribusiness core	21
AGB 310 Agribusiness Management I (3)	
AGB 320 Agribusiness Marketing I (3)	
AGB 332 Agribusiness Finance (3)	
AGB 360 Agribusiness Statistics (3)	
AGB 364 Agribusiness Technologies I (3)	
AGB 365 Agribusiness Technologies II (3)	
AGB 414 Agribusiness Analysis (3)	
Preveterinary medicine prerequisites	54–58
Total	75–79

Veterinary College Acceptance. A student who has been accepted to a school of veterinary medicine before he or she has earned a B.S. degree in the Morrison School may do so by completing a minimum of 30 semester hours at ASU and the General Studies requirement. Students must receive a written statement from the dean of the Morrison School giving senior-in-absentia privileges. A student is eligible to receive the B.S. degree after the ASU Office of the Registrar receives a recommendation from the dean of the veterinary professional school and a transcript indicating the student has completed the necessary semester hours commensurate with ASU graduation requirements.

Veterinary Medical Schools. There are approximately 27 schools of veterinary medicine in the United States. Each school establishes the specific prerequisites that are required for admission. Advisors in the Morrison School assist students in designing their class schedules to meet the requirements of the veterinary schools to which they plan to apply. Each school generally looks for courses in biology, chemistry, genetics, microbiology, and organic chemistry. In addition to a science foundation, all students must meet the University General Studies requirement, complete 45 semester hours of upper-division courses, and satisfy the school requirements.

Resource Management Concentration. The resource management concentration combines the agribusiness con-



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

NOTE: For the General Studies requirement, courses, and codes (such as L, SQ, C, and H), see "General Studies," page 78. For graduation requirements, see "University Graduation Requirements," page 74. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 51.

centration core with solid technical preparat on in biology chemistry, and/or economics. There is a growing demand by industry and government for persons who understand both the technical and managerial basis for sustainable deve op ment, remediat on and/or ut lizat on of natural resources for agribusiness, conserv ation, and habitat restoration. Courses and field projects prepare the student to analyze, develop, and manage programs that make use of land and water in an economic as well as environmentally sustainable fashion

Resource Management

AGB 455 Resource Manageme t *SB*	3
AGB 480 Agribusiness Policy and Government Re ulati ns	3
ETM 30 Envir nn ental Management	3
Agribus ness core	36
Resource Management prerequisites	43 51
Total	88 96

Environmental Resources—B.S.

The primary emphasis of the Environmental Resources major is natural resource management and conserv ation. Particular attention is given to the study of ecosysten char acteristics as they relate to the use of renewable resources Students learn applications of ecological princ'ples to resource management through examples drawn from forest, range, riparian, and urban ecosystems The Environmental Resources major offers three concentrations. ecology, watershed ecology and wild ife habitat management.

GRADUATION REQUIREMENTS

The complet on of a minimum of 120 semester hours including the First Year Composition requirement, General Studies ("General Studies," page 78), the Env ronmental Resources core, and selected concentration requirements leads to the B.S. degree An overa l GPA of 2 00 and a mini mum grade of "C" in the Environmental Resources core are required for graduation. Students must have comp eted a minimum of 45 semester hours of upper div sion credit. Some of the Environmental Resources core courses may also be used to meet General Studies requirements.

Environmental Resources Core

BIO 181 Genera Bio o y *SQ*	4
BIO 182 Genera Bio o y *SG*	4
CHM 101 Introductory Chemistry *SQ*	4
CHM 231 Elementary Organic Chemistry *SQ**	3
CHM 235 Elementary Organic Chemistry Laboratory *SQ**	1
ERS 130 Introducti n to Environmental Science *SQ*	4
ERS 207 Plant Taxon my	4
ERS 225 So ls	3
ERS 226 So s aboratory	
ERS 246 Env ronn ental Conservation and Eco o y *G*	3
ERS 301 Ec ogy	3
ERS 350 Environmenta Statistics *CS*	3
ERS 365 Watershed Management	3
ERS 402 Vegetation Meas rement	4
ERS 480 Ecosystem Management and Planning *L*	3
ERS 485 GIS in Natural Resources	3
ERS 490 Recent Advances n Environmental Resources	1
MAT 210 Brief Calculus *MA*	3
Core total	54

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

Ecology Concentration

The ecolo_y concentration focuses on connect ons between basic ecological principles and their appl cation to a broad array of environmental challenges across a wide range of ecosystems. Course work concentrates on the inter relationships of so l, water, and vegetation systems and the fauna that inhab t these systems. In add tion to a strong foundation in these areas, students are provided with the analytical tools and skills to ev aluate and apply ecological concepts to management issues. Potential employers of graduates in this fie d of study include federal resource management agencies, environmental protection agencies, departments of env ronn enta qual ty, state land depart ments, and private environmental consu ting firms.

This concentrat on is completed by taking the ERS core curricu um and 25 hours of courses listed below, with a minimum of 10 hours from each group.

Gr up A Introductor and Background Ecology

ERS 307 Plan t Identif cat n	4
ERS 311 Applied Ecology	4
ERS 420 Eco ogical Restorat on	3
ERS 425 Soil Class fication and Management	3
ERS 433 Riparian Ecosystem Management	3
ERS 434 Wetland Ecosystems and Soils	3
ERS 460 Applied Systems Ecology	3
ETM 301 Env ronn ental Mana e ent	3
GLG 101 Introduction to Ge olo gy I Physical *G, SQ**	3
GLG 103 Introductio to Geo ogy I Laboratory *SQ*	1
GPH 111 Introduction to Phy sical Geography *SQ*	4
GPH 210 Society and Env ron ment *G*	3
PLB 308 Plant Physiology	4

Group B Focus Areas and Tools of Ecology

ERS 364 Surface Water Hydroloo y	3
ERS 448 Soil Ecolo_y	3
ERS 449 Landscape Ec ogy	3
ERS 474 Wildlife Ecolo_y	3
ERS 475 Wi d ife Management	4
ERS 477 Env ronmental Risk Asses ment and Mana en ent	3
ERS 486 Remc te Sensing in Env ronn ental Resources	4
GPH 314 G obal Change *G, HL*	3
GPH 381 Geo raphy of Natura Resources *G*	3
GPH 418 Landform s f the Western United States *L*	3
GPH 481 Environn ental Geography	3

* Both GLG 10 ar d 103 must b taken to se ure SQ credit.

Additiona courses must be approved by an advisor.

Watershed Ecology Concentration

he watershed ecology concentration underscores the importance of understanding and placing environmental processes and problems at the watershed or landscape level. Students completing this concentration have a solid back ground in physical and biological sciences. Upper d vision course work focuses on providing the intellectual capabil ty and tools to address water related managen ent issues. Graduates may pursue careers with federal and state agen cies or n the private sector as resource managers, environ mental health specia ists, or cor sultants

This concentration is comp eted by taking the ERS core curr culum and 25 hours of courses sted below, with a minimum of 10 hours from each group

Group A Introduction and Background to Watershed Ecology

CHM 302 Environmenta Chem stry	3
ERS 307 Plant Ident fication	4

ERS 311 Applied Ecology 4
ERS 333 Water Resources Management. 3
ERS 364 Surface Water Hydrology 3
ERS 425 Soil Classification and Management 3
ERS 460 Applied Systems Ecology 3
ERS 465 Surface Water Quality 3
ETM 302 Water and Wastewater Treatment Technology 3
GLG 101 Introduction to Geology I Physical *SQ* 3
GLG 103 Introduction to Geology I Laboratory *SQ* 1
GPH 212 Introduction to Meteorology *SG* 3
GPH 214 Introduction to Meteorology Laboratory *SG** 1

Group B Focus Areas and Tools of Watershed Ecology
ERS 420 Ecological Restoration 3
ERS 433 Riparian Ecosystem Management 3
ERS 477 Environmental Risk Assessment and Management 3
ERS 486 Remote Sensing in Environmental Resources 4

* Both GPH 212 and 214 must be taken to secure SG credit.

Additional courses must be approved by an advisor

Wildlife Habitat Management Concentration

The wildlife habitat management concentration focuses on the connection between wildlife ecology and habitat management The student completing this concentration gains a solid background in wildlife biology, coupled with a strong understanding of the physical and biological elements of vegetation ecology. Upper division course work provides those necessary tools to meet the challenges of maintaining a balance between biological diversity and social pressures on the wildland resources Potential employers of graduates from this field of study include the U S. Fish and Wildlife Service, U S Forest Service, Bureau of Land Management, Department of Defense, state wildlife management departments, and private environmental consulting firms

This option is completed by taking the ERS core curriculum and 25 hours of courses listed below, with a minimum of 10 hours from each group.

Group A Introduction and Background to Wildlife Habitat Management
BIO 331 Animal Behavior 3
BIO 340 General Genetics 4
BIO 360 Animal Physiology 4
BIO 370 Vertebrate Zoology 4
BIO 385 Comparative Invertebrate Zoology 4
BIO 426 Limnology *L* 4
BIO 471 Ornithology 3
BIO 472 Mammalogy 4
BIO 474 Herpetology 3

Group B Focus Areas and Tools of Wildlife Habitat Management
ERS 307 Plant Identification 4
ERS 311 Applied Ecology 4
ERS 353 Wildlife Nutrition 3
ERS 420 Ecological Restoration 3
ERS 433 Riparian Ecosystem Management 3
ERS 434 Wetland Ecosystems and Soils 3
ERS 460 Applied Systems Ecology 3
ERS 474 Wildlife Ecology 4
ERS 475 Wildlife Management 3
ERS 486 Remote Sensing in Environmental Resources 4

Additional courses must be approved by an advisor.

Environmental Resources Minor

A minor in Environmental Resources is available to students who are interested in environmental courses but who wish to pursue other majors. A minimum of 27 semester hours of course work is required with 15 semester hours of upper division courses in environmental resources. A grade of "C" or higher is required for all courses taken for the minor Independent study and special topics courses may not be used to satisfy the minimum course requirements.

Required courses
BIO 181 General Biology *SQ* 4
BIO 182 General Biology *SG* 4
ERS 225 Soils 3
ERS 226 Soils Laboratory 1
ERS 301 Ecology 3
Additional upper division ERS courses 12

Total 27

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 to 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 2 50 for nonresident applicants

B.A.S Degree Graduation Requirements. The B A.S. degree program consists of 60 semester hours of upper division courses, with 30 hours in residence. An overall GPA of 2 00 or higher is required

A.A S degree transfer 60
Assignable credit 6
B A S. core 16
Concentration 19
General Studies 19

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 courses are taken in the core or concentration. General Studies courses focus on contextual learning

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

Total 19

Assignable Credit

Assignable credit allows space in the curriculum for prerequisite courses The courses are determined by the student and advisor

NOTE: For the General Studies requirement courses, and codes such as L SQ C and H) see "General Studies " page 78 For graduation requirements see University Graduation Requirements page 74 For an explanation of additional omnibus courses offered but not listed in this catalog see "Classification of Courses " page 51.

B.A.S. Core

AGB [illegible]	Agribusiness Management I	[illegible]
AGB 32[illegible]	Agribusiness Marketing	
AGB 3[illegible]	Agribusiness Statistics CS	
AGB 414	Agribusiness Analysis L	
AGB 46[illegible]	Agribusiness Management Systems	4
Total		6

Consumer Products Technology Concentration. Students studying consumer products technology prepare for a career in the food and consumer product industries. Students learn to develop food, drug, cosmetic, and other consumer products and to ensure product safety and marketability by obtaining a thorough mastery of courses in product and package design, manufacturing, processing, and safety.

Consumer Products Technology

AGB [illegible]4[illegible]	Food Process	[illegible]
AGB 364	Agribusiness Technologies I	[illegible]
AGB 44[illegible]	Food Safety	3
AGB 49[illegible]	Recent Advances in Agribusiness	1
MET 341	Manufacturing Analysis	3
MET 4[illegible]4	[illegible] Manufacturing	3
MET 4[illegible]4	Packaging Design	3
Total		1[illegible]

Food Retailing Concentration. A student studying food retailing prepares for a career in the food marketing and distribution industries. Potential employers are food manufacturing and processing companies, distribution centers, wholesalers, and all types of food retailers, e.g., supermarkets, mass merchandisers, fast food outlets, restaurants, and direct marketers of food.

Food Retailing

AGB 33[illegible]	Agribusiness Accounting	3
AGB [illegible]3[illegible]	Agribusiness Finance	3
AGB [illegible]4[illegible]	Food Processing	
AGB 42[illegible]	Food Marketing	
AGB 440	Food Safety	[illegible]
AGB 44[illegible]	Food Retailing	[illegible]
AGB 484	Internship	
Total		

Resource Team Specialist Concentration. The resource team specialist concentration combines the technical preparation acquired in a B.A.S. program with a special orientation in environmental and resource management. This concentration prepares individuals to participate as an integral part of an environmental emergency response team as well as postemergency biological and environmental rehabilitation efforts.

Resource Team Specialist

AGB [illegible]	Agribusiness Finance I	3
AGB 456	World Agricultural Resources G	3
AGB 4[illegible]	Resource Policy and Sustainability	3
AGB 4[illegible]	Bioremediation	3
AGB 484	Internship	
ETM 3[illegible]	Environmental Management	3
ETM 3[illegible]	Environmental Regulations	[illegible]
Total		9

Morrison School of Agribusiness and Resource Management

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PROFESSORS
BRADY, BROCK, DANEKE, EDWARDS, KAGAN, MARQUARDT, SEPERICH, SHULTZ, THOR

ASSOCIATE PROFESSORS
GREEN, MILLER, RACCACH, RICHARDS, WHYSONG

ASSISTANT PROFESSORS
BURKNIK, MANFREDO, PATTERSON, SCHMITZ, STANTON

AGRIBUSINESS (AGB)

AGB 100 Introduction to Agribusiness. (3)
f
Overview of agribusiness industries and career opportunities.

AGB 105 Global Resources. (3)
fall and spring
Effect of quality, quantity, and cost of national food supplies on technology, marketing, and world agricultural policies.

AGB 161 Computer Applications for Agribusiness Industries. (3)
spring
Use and integration of word processing, spreadsheets, and databases as tools for managing an agribusiness firm. Lecture, lab.
General Studies: CS

AGB 171 Animal Science. (3)
spring
Comparative growth, development, and propagation of domestic animals.

AGB 191 First Year Seminar. (1–3)
not regularly offered

AGB 194 Special Topics. (1–4)
not regularly offered

AGB 210 Livestock Management. (3)
fall and spring
Methods of managing livestock enterprises, economics, loss prevention, and marketing.

AGB 211 Crop Management. (3)
fall and spring
Crop production, management principles, and their application to crop growth and development.

AGB 250 World Food Dynamics. (3)
spring
Transformation and development of raw agricultural commodities into nutritional food products. Emphasis given to food expansion in developing countries.
General Studies: G

AGB 251 Cultural Diversity in Agribusiness. (3)
spring
Promotes the awareness and appreciation of cultural diversity within the U.S. through the study of cultural and social contributions in agribusiness of women and minorities.

AGB 258 International Agribusiness. (3)
fall
Identification and analysis of methods, problems, and future of international agribusiness operations. Emphasizes special problems associated with international agribusiness systems.
General Studies: G

AGB 266 Golf Course Irrigation. (3)
fal and spring
Design management and ma ntenance f go f c urse rr gat on sys tems Lecture ab.

AGB 271 Veterinary Medicine Today. (3)
spr ng
Introduction to the ro e of the veter nar an as re ated to the f e ds of food supp y and veter nary med c ne

AGB 294 Special Topics. (1–4)
not regularly offered

AGB 310 Agribusiness Management I. (3)
fall
Principles of management, nc ud ng p ann ng organ z ng ntegrat ng measur ng, and developing peop e n agr bus ness organ zat ons

AGB 311 Establishing an Agribusiness. (3)
fa l
Opportun ties and prob ems assoc ated w th new f rm deve opment in agr bus ness Business p an is wr tten and presented oral y

AGB 320 Agribusiness Marketing I. (3)
fall and spring
Exam nes market ng strategy, focus ng on the market ng m x product pr ce, promot on and place n a dynam c soc oeconom c env ron- ment Prerequ s tes ACC 230 240 AGB 360 ECN 112

AGB 321 Agribusiness Marketing II. (3)
fall and spr ng
Exam nes the food market ng system with emphas s on the market ng inst tut ons, arrangements and methods for bas c commod t es Pre- requisites ACC 230, 240, AGB 360 ECN 112

AGB 330 Agribusiness Accounting. (3)
fa l
ntroduct on to manager a account ng f r agr bus ness us ng comput er zed account ng systems

AGB 332 Agribusiness Finance I. (3)
fall and spring
ntroduct on to concepts n agr bus ness f nanc a management time value of money r sk and return capita budget ng and cost of cap ta Prerequisites ECN 111 and 112 (or the r equ va ents ntroductory account ng

AGB 333 Agribusiness Finance II. (3)
spr ng
ntroduct on to f nanc a market and nst tut ons nterest rate determ nat on money and bank ng equ ty markets farm cred t system ven dor financing Prerequ sites ECN 111 and 112 or the r equ va ents ntroductory account ng

AGB 334 Agricultural Commodities. (3)
fa
Trading on futures markets Emphas s on the hedg ng pract ces w th grains and meats Prerequ s te AGB 320

AGB 340 Food Processing. (3)
fa l
Introduction to processed food qua ity assurance stat st ca samp ng and nspect on procedures Prerequ s te AGB 364

AGB 341 Food Analysis. (3)
not regu arly offered
Process ng control and sc ent fic nstrumentat on used n food qua ty assurance laborator es Prerequ s tes AGB 364 CHM 101

AGB 351 Management Science. (3)
fa l
Focus on the construct on, so ut on, and nterpretat on of quant tat ve mode s used for management dec s on mak ng in agr bus ness f rms Prerequ s tes AGB 320 360 ECN 112, MAT 117
Genera Stud es CS

AGB 355 Sustainable Agriculture Systems. (3)
fal and spring
nnovative deve opments n prec s on farm ng rrigat n, s ls t age methods mach nery and b techno ogy 'n crop produ t on. Prerequ s te AGB 211

AGB 360 Agribusiness Statistics. (3)
fa and spr ng
Stat st cal methods w th app cat ons n agr bus ness and resource management. Lecture computer ab Prerequ s te co ege a gebra
Genera Stud es CS

AGB 364 Agribusiness Technologies I. (3)
fa
Exam nat on of methods f manag ng d verse crop and l vestock enter pr ses w th emphas s on growth deve opment market ng and oss prevent on Prerequ s te B O 100

AGB 365 Agribusiness Technologies II. (3)
fa
Biotechno ogy and ther methods used n the product on, process ng, and d str but on of food Prerequ s te: B O 100

AGB 366 Golf Turf Management. (2)
fa and spr ng
Se ect on estab shment and ma ntenance of turf grasses bred spe- c f ca y for go f greens fa rways, and roughs Lecture ab

AGB 367 Golf Course Landscape Plants and Design. (3)
fa and spr ng
dent f cat on culture, and use f p ants n a go f course sett ng Cross sted as PLB 363 Cred t s a owed for on y AGB 367 or PLB 363. Fee

AGB 370 Wildlife and Domestic Animal Nutrition. (3)
spr ng
Survey of nutr t ona needs of domest c and w d an mals Prerequ - s tes AGB 210 211 Genera Studies SQ course

AGB 371 Animal Genetics. (3)
fal
Pr nc p es of an mal genet cs nc ud ng heritab e tra ts chromosoma aberrations, popu ation genetics, molecu ar genet cs and gene regu- at on Prerequ s tes: BIO 181 182

AGB 380 Applied Microeconomics. (3)
fa l and spr ng
Emphas s on app cat on of the theory of the f rm, the ry of exchange and consumer the ry

AGB 394 Special Topics. (1–4)
not regu ar y offered

AGB 410 Agribusiness Management II. (3)
spr ng
Pr nc ples of human res urce management n agr bus ness f rms P e requ s te AGB 310

AGB 411 Agricultural Cooperatives. (3)
spr ng
Organ zat on operat on and management of agr cu tura coopera t ves

AGB 414 Agribusiness Analysis. (3)
fa and spr ng
A a ys s of ag bus ness f rm dec s on n the eco og ca econom c soc a and po t ca env ronments Spec a emphas s on eth ca issues surround ng fo d product on and consumpt o
Genera Stud es L

AGB 420 Food Marketing. (3)
spr ng
Food process ng packag ng d str but n market research new food resea ch and development and soc a mp cat ons Prerequ s te AGB 320

AGB 422 Consumer Behavior. (3)
fa
App cat on of behav ora concepts n ana yz ng consumer food pur cha es and the r mp cat ons f r market ng trateg es Prerequ s te c mp et on of Agr bus nes core or ts equ va ent

AGB 424 Sales and Merchandising in Agribusiness. (3)
summer
Pr nc p es and techn ques of se ng and merchand s ng n the agr cu tura and f od ndustr es

AGB 425 Agricultural Marketing Channels. (3)
fa
Operat ona stages of agr cu tura commod t es n n rma d str but on systems and mp ementat n of arket ng strateg es Prerequ s te: AGB 320

NOTE: For the Genera Stud es requ rement, courses and codes such as L SQ C and H see Genera Stud es page 78. For graduat on requ rements see "Un vers ty Graduat on Requ rements, page 74 For an exp anat n f add t' a omn bus courses offered but not sted n th s cata og, see "C ass f cat on of Courses," page 51

AGB 429 Marketing Research. (3)
fal
Exam nes the market ng research process and ts ro e n fac l tat ng agr bus ness dec s ons Emphas zes prob em dent fcat on survey des gn and data ana ys s Prerequ s te comp et on of Agr business core or ts equ valent

AGB 431 Intermediate Agribusiness Financial Management. (3)
spr ng
Comprehens ve treatment of topics 'n f nanc a management of agr bus ness cap ta structure d v dend pol cy asset va uation mergers and a qu s t ons r sk management Prerequ s tes AGB 332 333

AGB 433 Intermediate Agribusiness Financial Markets. (3)
spr ng
Ro e and funct on of agr bus ness n U S financ a system T p cs nc ude r ra bank ng farm cred t system, monetary po cy, and federa reserve Prerequ s te comp et on of Agr business core or ts equ va- ent

AGB 434 Agricultural Risk Management and Insurance. (3)
fal
Strategies to manage agricu tura pr ce and bus ness r sk der vat ves nsurance, se f nsurance, and pub c pol cy Prerequ s te comp et on of Agr bus ess core or ts equ valent

AGB 436 Entrepreneurship and Financial Management of E-Commerce. (3)
fa
Uses ectures case stud es and bus ness plans to h gh ght cha lenges f start ng and runn ng a sma bus ness Lecture sem nar, case tud es computer abs

AGB 440 Food Safety. (3)
spr ng
C ntrol, prevent on, and p ed ct on of m cr b a and chem ca food b rne d eases. Prerequ s te AGB 442 or nstructor approva

AGB 441 Food Chemistry. (3)
spr ng
B ochem cal and chem ca nteract ons that occur n raw and pro cessed foods Prerequ s tes CHM 115 231

AGB 442 Food and Industrial Microbiology (4)
not regu ar y offered
Food and industr a re ated m croorgan sms deter oration and preser- vat on of ndust a commod t es Lecture lab Prerequ site m crob o - ogy course w th e ture and ab

AGB 443 Food and Industrial Fermentations. (3)
spr ng
Management man pu at on and metabo c act v t es of ndustr al m crob a cu tu es and the r processes Prereq site. AGB 442 or nstructor appr va

AGB 445 Food Retail ng. (3)
fa
Food reta management D scusses trends problems and funct ons of f od reta managers w th variou eta nst tut ns Lecture case stud es

AGB 450 International Agricultural Development. (3)
fa
Trans t on of deve op ng countr es from subs stence to modern agr cu ture Emphas s p aced on mp cat ons for U S agr bus ness work ng abroad
Genera Stud es G

AGB 452 International Agricultural Policy (3)
fa
Use f nternationa trade theory to ana yze the effects of g vernment po c es trade agreements and exchange rates on agr bus ness Pre requ s te ECN 112

AGB 454 International Trade. (3)
spr ng
Internat ona pract ces n trad ng of agr bus ness, techno ogy and resource products and serv ces

AGB 455 Resource Management (3)
spr ng
Exp ores d fferences between s c eta and nd v dua va uat ons of nat ura resources and conside s pub c po cy vers s market based so u t ons t env ronmenta c ncerns Prerequ s te: ECN 112
General Stud es SB

AGB 456 World Agricultural Resources. (3)
fa
Wor d product on and consumpt on of agricu tura products, nterna t ona re at onsh ps and agenc es concerned w th world agr cu tura deve opment prob ems
Genera Stud es G

AGB 457 Resource Policy and Sustainability. (3)
fa
C ns der the evo ut n of po cy des gn focus ng on how resource and env ronmenta concerns have affected agr cu tura deve pment and trade po c es Prerequisite: ECN 112

AGB 458 Bioremediation. (3)
spr ng
Techn ca regu atory and po cy ssues emanat ng from m neta ng and an ma waste Lecture, case stud es

AGB 460 Agribusiness Management Systems. (4)
spr ng
Devel pment and use of dec s on support systems for agribus ness management and market ng Lecture, ab

AGB 463 Electronic Commerce Applications. (3)
fa
Overv ew of e ectron c commerce techno ogy w th ntroduct on to bas cs of des gn contro operat on organ zat on and emerg ng ssues Pre or corequ s te AGB 460 or ts equ va ent

AGB 466 Integrated Pest Control. (2)
fa and spr ng
Management f pests affect ng go f turf and andscape p ants Struc tura Pest Contro Board sprayer cert f cat on preparat on offered dur ng the semester Lecture ab.

AGB 470 Comparative Nutrition. (3)
not regular y offered
Effe ts of nutr t on on a ma systems and metab c funct ons Pre requis te. CHM 231

AGB 471 Diseases of Domestic Animals. (3)
spr ng
D scuss on of an ma welfare mechan sms of d sease deve pment causes and c ass f cat on of d seases d sease res stance, and com mon zoon ses Prerequ s te B O 181

AGB 473 Animal Physiology I. (3)
not regu arly offered
Contro and f nct on of the nervous, muscu ar card ovascu ar respira tory and rena systems of domest c an ma s P erequ s tes B O 181 CHM 113

AGB 479 Veterinary Practices. (3)
fa and spr ng
Observat n of and part'c pat on n veterinary med ne and surgery s perv sed by oca veter nar ans Prerequ s te advanced preveter nary tudent

AGB 480 Agribusiness Policy and Government Regulations. (3)
spr ng
Deve opment and mp ementat on of government food, drug pestic de and farm pol c es and regu at ons that affect the manageme t of agr bu ness.

AGB 484 Internship. (1 12)
fa and spr ng

AGB 490 Recent Advances in Agribusiness. (1)
fa and spr ng
Reports and d scuss ons of current top cs and problems assoc ated w th agr bus ness May be repeated fo cred t

AGB 492 Honors Directed Study. (1–6)
not regu ar y offered
Poss b e top cs
(a) Recent Advance n Food Sc ence t

AGB 493 Honors Thesis. (1–6)
not regu ar y offered

AGB 494 Special Topics. (1–4)
not regu arly offered

AGB 498 Pro-Seminar (1 7)
not regu ar y offered

AGB 499 Individualized Instruction (1 3)
not regular y offered

AGB 500 Research Methods. (1–12)
not regu arly offered

AGB 501 Master's Thesis Preparation. (1)
fa and spring
Step by step gu de nes to ajor e ements of a master s thes s a ong w th pract ca gu de nes for conduct ng research

AGB 510 Advanced Agribusiness Management I. (3)
fa l
Manag ng and f nanc ng agr bus ness emphas z ng env r nmenta and econom c sustainab ty n a g oba economy undergo ng rad cal change. Prerequ s te AGB 310.

AGB 511 Advanced Agribusiness Management II. (3)
spr ng
Ana ys s of organ zat on behav or change, and resource requ rements w th n agr bus ness systems Prerequ s te AGB 310

AGB 512 Food Industry Management. (3)
spr ng
Operations and management of food process ng factor es, food d str' but on centers and reta food hand ng f rms

AGB 513 Advanced Cooperatives. (3)
fal
Advanced study f cooperat ves and other nongovernmenta organ za t ons (NGO focus ng on management and proposa preparat n for nternat ona agenc es

AGB 514 Advanced Agribusiness Analysis I. (3)
spr ng
Vert ca ntegrat on and d fferent at on n fo d and agr cu tura 'ndus tries. Prerequ s te AGB 510 or 528

AGB 515 Agribusiness Coordination. (3)
spr ng
Organ zat ona alternat ves for agr bus ness w th emphasis on cooper at ves and trad ng compan es Prerequ s te AGB 510 or 528

AGB 528 Advanced Agribusiness Marketing. (3)
fa
Theory and ana ys s of market ng farm commod t es, r sks and the effect of future trad ng on cash prices

AGB 529 Advanced Agribusiness Market ng Channels. (3)
spr ng
Ana ys s of agribus ness market channel systems. Formu at on of mar ket ng strateg es.

AGB 532 Advanced Agribusiness F'nance. (3)
fa l
F nancial management of agr bus ness firms agr bus ness f nanc a analys s, investment ana ys s agricu tura r sk management and intro duct on to agr cu tura f nanc a ntermed ar es Prerequ s tes both computer teracy and 1 f nance course or on y nstructor approva

AGB 535 Commodity Analysis. (3)
fa
Ana ys s of commod ty markets.

AGB 536 Small Business Finance, Entrepreneurship, and E-Commerce. (3)
fa
Uses ectures case stud es and bus ness p ans to h gh ght cha - enges of start ng and runn ng a sma bus ness Lecture, sem nar case studies, computer abs

AGB 540 Advanced Food Science. (3)
not regu arly offered
Chem cal and phys ca nature of processed foods Emphas s n food product deve opment

AGB 550 International Agricultural Development. (3)
fa
Trans tion of deve op ng countr es from subs stence to modern agr cu ture Emphas s p aced on mp ıcat ons for U S agribus ne s work ng abroad

AGB 551 Agribusiness in Developing Countries. (3)
spr ng
Factors nf uenc ng successfu deve opment of agribus ne s enter- prises n deve op ng countr es nc ud ng poverty access to cap ta and techno ogy and trade opportun t es

AGB 552 International Agricultural Policy. (3)
fall
Use of nternat ona trade theory to ana yze the effects of government po c es, trade agreements and exchange rates on agr bus ness

AGB 554 Advanced International Trade. (3)
fal
Advanced nternat ona pract ces 'n trad ng of agribus ness techn l ogy and resource products and serv ces

AGB 557 Resource Policy and Sustainability. (3)
fa l
Cons ders the evolut on of po cy des gn focusing on how resource and environmenta concerns have affected agr cu tural deve opment and trade po c es

AGB 558 Advanced Bioremediation. (3)
spr ng
Management and po cy ssues re ated to b oremed at on of m neta l ng and an ma waste and replacement of chem ca contro with b o og ca methods Lecture case studies.

AGB 560 Advanced Agribusiness Management Systems. (3)
not regu arly offered
Deve pment and use of dec s on support systems for agribus ness management dec s on mak ng Prerequ s te AGB 510

AGB 561 Agribusiness Research Methods. (3)
fa
Use of mode bu d ng, hypothes s test ng and emp r ca ana ysis n so v ng agribus ness prob ems

AGB 570 Managerial Economics for Agribusiness. (3)
fall
Concepts in m cro and macroeconom cs app ed to agr bus ness management env ronments price format on market structure nfor mat on ec nom cs f sca and monetary po cy Prerequ s tes: ntroduc- tory m cro and macr e onomics.

AGB 580 Practicum. (1 12)
not regu arly offered

AGB 581 Advanced Agribusiness Policy. (3)
fa l
Po cy-mak ng h story structure and process

AGB 583 Field Work. (1–12)
not regu ar y offered

AGB 584 Internship. (1–12)
not regular y offered

AGB 587 Resource Policy and Sustainability. (3)
fall
Cons ders the evolut on of po cy des gn, focus ng on h w re ource and env ronmenta concerns have affected agr cu tura deve pment and trade pol c es

AGB 590 Reading and Conference. (1 12)
not regu ar y offered

AGB 591 Seminar. (1–12)
not regu ar y offered

AGB 592 Research. (1 12)
not regula ly offered

AGB 593 Applied Project. (1 12)
not regularly offered

AGB 594 Conference and Workshop. (1–12)
not regu ar y offered

AGB 595 Continuing Registration. (1)
not regu arly offered

AGB 598 Special Topics. (1–4)
not regular y offered

AGB 599 Thesis. (1 12)
not regu ar y offered

AGB 600 Research Methods. (1 12)
not egu arly offered

AGB 690 Reading and Conference. (1–12)
not regu arly offered

NOTE: For the Genera Stud es requirement courses and codes such as L SQ C, and H), see "Genera Stud es " page 78 For g aduat on requ rements see 'Univers ty Graduat on Requ rements, page 74 For an exp anation of add t ona omn bus courses offered but not sted n th s cata og, see C ass fıcat on of Cour es " page 51

ENVIRONMENTAL RESOURCES (ERS)

ERS 130 Introduction to Environmental Science. (4)
fa
ntroduct on to so resources, the r phys ca and chem ca propert es c ass f cat ene gy dynam c and the ro e t ey p ay env ronmen ta qua ty. Lecture ab
General Stud es SQ

ERS 191 First-Year Seminar. (1 3)
not regu ar y offered

ERS 207 Applied Plant Taxonomy. (2)
fa
ntrod ct o to dent f cat on of vascu ar p ants Survey of p ant fam es F e d tr ps equ red 2 hours ecture Prerequ s te B O 182 Corequ te ERS 208

ERS 208 Applied Plant Taxonomy Laboratory. (2)
fa
Techn ques and pract ces vascular p ant dent f cat on Lab. Prereq u s te B O 182 C requ s te ERS 207

ERS 225 Soils. (3)
fa
Fundamenta pr pert es of so s a d the re at n to p ant growth and the nutr t on of man and an ma s Re at on f so s to env ronmenta qua ty Prerequ s te CHM 101 or 113 r ts equ va ent

ERS 226 Soils Laboratory. (1)
fa
Se ected exerc ses to broaden the background and understand ng of bas c so pr nc p e Lab Coreq s te ERS 225

ERS 246 Environmental Conservation and Ecology. (3)
spr ng
Pr nc p es of env ronmenta conservat on from g ba h st r ca and eco og ca per pe t ves Con derat on of deve op ent/susta nab ty ssues
Genera Stud es G

ERS 294 Special Top cs. (1–4)
not regu arly offered

ERS 301 Ecology. (3)
fa
ntroduct on to the pr nc p es of eco ogy emphas z ng vegetat n com mun ty eco ogy F e d tr ps requ red P erequ s te B O 182

ERS 307 Plant Ident'fication. (4)
fa
dent f cation of key p ants of wester range ands and forests Labora tory emphas s on grass dent f cat on Lecture ab Prerequ s te ERS 207 or PLB 310 r ts equ va ent

ERS 311 Applied Ecology. (4)
spr'ng
Eco og ca pr nc p es and the r mp cat on for management of ecosys tems 3 h urs ecture, 1 hour ab Prereq s tes ERS 225 301 350

ERS 333 Water Resources Management. (3)
not regu arly offered
Sources the r deve pment and con ervat n n ar d reg ons for agr cu tura natura resources and urban uses Prerequ s te. CHM 101 or 113.

ERS 350 Environmenta Statistlcs. (3)
fa
Stat st ca methods w th app cat ons n natura resource m nagement and the env ronmenta sc ences Use of computers and the nternet Prerequ s tes CSE 180 MAT 117
Genera Stud es CS

ERS 353 Wildlife Nutrition. (3)
not regu arly offered
Pr nc p es of n tr t metabo sm n w d fe spec e w th emphas s on understand ng the nteract o f w d fe w th the r env ronment Pre requ s tes a comb nat n f B O 181 and 182 and CHM 1 1 or on y nstructor approva

ERS 360 Range Ecosystem Management. (3)
fa
Ecosystem manageme t pr nc p es app ed to range ands Herb vory as an eco og ca process eva at n of ra ge a d ea th mu t p e use f range ands Lecture rec tat on Prerequ s te B 320 or ts equ v a ent , ERS 246

ERS 364 Surface Water Hydrology. (3)
fa n even years
Hydr og c pr nc p es n an eco og ca context. D scharge measure ments pen channe hydrau cs bed forms, sed ment transport as app ed to ec og ca prob ems. Lecture ab, f e d tr p. Prerequ s te ERS 350

ERS 365 Watershed Management. (3)
not regu ar y offered
Hydro g c, phys ca b o og ca and ec g ca pr nc p es app ed to watershed management mpact of ecosystem manipu at ons on water y e d and qua ty. 1 weekend f e d tr p. Prereq s tes: ERS 225 246

ERS 402 Vegetat'on Measurement. (4)
spr ng
Vegetat on samp ng and nventory as re ated to an ma hab tat re a t ns Lecture, ab 1 weekend f e d tr p Prerequ s tes a comb nat n of ERS 301 and 307 and 350 and program major or on y nstructor approva .

ERS 415 Wildlife Life Histories. (4)
spring
L fe h stor es of the major mamma rept e amph b an, and av an spe c es found n the So thwest w th emphas s on management Lecture, ab Prerequ s tes B O 370 or 385), ERS 360

ERS 420 Ecological Restoration. (3)
spr ng
Techn ques of eco og ca restorat on app ed for the mprovement of ar d and sem ar d and and sens t ve hab tats Weekend f e d tr ps Prerequ s te ERS 360

ERS 425 Soil Classification and Management. (3)
not regu ar y offered
Pr nc p es of so genes s morpho ogy and c ass f cat on Presents management and conservat n pract ces Prerequ s te. ERS 225

ERS 433 Riparian Ecosystem Management. (3)
not regu arly offered
Exam nes the funct ons and components that make up r par an eco-systems and the management of the e ecosystems Lecture fie d tr p. Prerequ s te ERS 225 or nstructor approva

ERS 434 Wetland Ecosystems and Soils. (3)
not regu arly offered
Wet and ecosystems structure and function nclud ng hydro ogy and b ogeochem stry with spec a emphas s on so s Lecture, weekend f e d tr p Prerequ s te ERS 225 or instructor approva

ERS 448 Soil Ecology. (3)
not regu ar y offered
So s v ewed n an ecosystem context so l-p ant re at onsh ps, nutrient budgets and ab ot c factors that nf uence so processes Prerequ s tes a comb nat on of B O 320 and ERS 225 and 226 or only nstruc-t approva

ERS 449 Landscape Ecology. (3)
not regu arly offered
Causes and eco og ca consequences of spat a and tempora pat-terns n the env ronment Prerequ s te ERS 301.

ERS 460 Applied Systems Ecology. (3)
not regu arly offered
Systems approach app ed to analys s and management of natural resource ecosystems. Use of s mu at'on mode s 2 hours ecture 3 hours ab Prerequ s tes ERS 350 (or ts equ va ent 1 course n ecol ogy

ERS 465 Surface Water Quality. (3)
spr ng n odd years
Exam nes factors that mpact water qua ty Surface water samp ng and ana ys s w th nterpretat on for w d fe humans and other users. Prerequ s tes ERS 364 365

ERS 474 Wildlife Ecology. (3)
not regu ar y offered
Integrates eco og ca concepts as app ed to w d fe popu at ons and the nteract on w th the hab tat and other species Lecture, lab 1 weekend f e d tr p Prerequ s te ERS 360

ERS 475 Wildlife Management. (4)
spr ng
Pr nc p es and techn ques of app ed eco ogy for the management of w d fe popu at on Lecture, lab Pre equ sites ERS 311 and 474 or their equ va ents)

ERS 477 Environmental Risk Assessment and Management. (3)
not regu ar y offe ed
Survey of methods re ated to dent f cat n eva uat on compar s n and management of env ronmenta r sks P e equ s te sen o stand ng.

ERS 480 Ecosystem Management and P ann ng. (3)
spr ng
P ann ng for management and conservat on of w d and ecosystems Eco og ca econom c and soc a constra nts on ng term susta nab e resource deve opment Comp ter too f r resource p a n ng Lecture 1 weekend f e d tr p Prerequ s tes ERS 402 or ts equ va ent sen or stand'ng
Genera Stud es L

ERS 484 Internship. (1–12)
not regu ar y offered

ERS 485 GIS in Natural Resources. (3)
fa
Pr nc p es of Geograph nfo mation Systems G S t zed n natura re ource management U e of computers f r spat a ana ys s f natu ra resources Lecture lab Prerequ s te CSE 180 or ts equ va ent

ERS 486 Remote Sensing n Environmenta Resources. (4)
spr ng
Pr nc p es and app cat on of remote ens ng techno og es n natu a resource management ntegrat o f computer zed data from ae a photography and LanSat magery n resou ce manageme t Lecture ab Prerequ s te ERS 485 or ts eq va ent

ERS 489 Undergraduate Research. (1 3)
fa and spr ng
Undergraduate resear h nde t e superv s f an env ronmenta resources facu ty member Prerequ te n or or sen or stat

ERS 490 Recent Advances in Environmental Resources. (1)
fall and spr ng
Current terature and s gn fica t deve opments vo v ng env ronmen tal resources May be repeated for cred t

ERS 492 Honors D rected Study. (1–6)
not regu ar y offered

ERS 493 Honors Thesis. (1–6)
not regu arly ffered

ERS 494 Special Topics (1–4)
not regu ar y offered

ERS 498 Pro Seminar. (1 7)
not regu ar y offered

ERS 499 Individualized Instruction. (1 3)
not regu arly ffered

ERS 500 Research Methods (1 12)
not regu ar y offered

ERS 533 Riparian Ecology. (3)
not regu ar y offered
Rev ew of recent terature, deve pments and meth ds re ated t r par an eco ogy. App cat ons of o and ands ape eco ogy to par an systems Lecture d sc s f e d tr ps

ERS 540 Plant Responses to Environmental Stresses. (3)
not regu ar y offered
React on of p ants to env onmenta st esses aer a po utants f re, herb vores mecha ca treatments pest c des and so amendments 1 weekend f e d tr p Prerequ s te ERS 360 o t uctor approva

ERS 550 Vegetation Dynamics. (4)
fa
Dy am s f vegetat o emphas z ng eco og ca succes on app ca t ons of an scape ec ogy and G S and ana ys s of vegetat n data F e d tr ps stud o Prerequ te ntroductory stat st cs course

ERS 551 Advanced Environmenta Statist cs. (4)
spr ng
Advanced stat st ca pr cedures for e v ronmenta resources Tech ques f ana yz g research data that do not meet assumpt ons Stu d o Prerequ te ERS 350 or ts equ va ent

ERS 553 Advanced Anima Nutrition. (4)
not regu ar y ffered
Metab c a d phys og ca nteract ns of nutr ents n w d and d me t cated an ma s c nsum ng natura feed . Le ture, ab

ERS 560 Systems Ecology (3)
not regu a y offered
Quant tat e es r pt n and mat emat ca mode ng of ecosystem str ct re and fu ct o Techn ques f r mode const u t on and s mu a t on Le ture ab Prerequ s tes ERS 350 or ts equ va ent mputer pr gram ng, 6 h rs n ec g a stud es

ERS 561 Spatia Statistics and GIS (3)
fa
Depe de t spat a data a a ys s and descr pt on sem var ogram var og ams k g ng nd G S ana ys s Lecture ab Prerequ s tes ERS 35 a d 485 or the r equ va ents

ERS 580 Practicum. (1 12)
not regu ar y offered

ERS 584 Internship. (1 12)
not regu ar y offered

ERS 585 Spatial Modeling with GIS. (3)
fa
G S techno gy f r spat a mode ng of natura resources Pract ca app cat on of G S t hn ogy for p b em o v g Lecture ab Pre requ s te ERS 485 or ts equ va e t or nstructor approva

ERS 590 Reading and Conference. (1 12)
not regu ar y offered

ERS 591 Env'ronmental Resources Seminar. (1 12)
not egu a y ffered

ERS 592 Research. (1 12)
not regu ar y offered

ERS 593 Applied Project. (1–12)
not reg ar y offered

ERS 594 Conference and Workshop. (1 12)
not egu a y ffered

ERS 595 Continuing Registration. (1)
not regu ar y offered

ERS 598 Special Topics. (1–4)
not reg ar y off red

ERS 599 Thesis. (1 12)
not eg a y offe d

ERS 691 Sem'nar. (1 12)
n t regu ar y ffered

NOTE: For the Genera Stud e requ rement c urses and codes such as L SQ C and H see Genera Stud es page 78 For g aduat on requ rements see Un ve s ty Graduat o Requ ements ' page 74 For a exp anat on f add t ona mn b s courses ffered but n t ste n th s cata og see C ass f cat on of C urses page 51

East College

David E. Schwalm, Dean

www.east.asu.edu/ecollege

PURPOSE

East College was created by the Arizona Board of Regents in February 1997 to serve four purposes:

1. to offer an array of upper division General Studies and general interest courses for students enrolled in ASU East degree programs;
2. to coordinate the Partnership in Baccalaureate Education with Chandler Gilbert Community College through which ASU East students are provided with lower-division General Studies and major prerequisite courses,
3. to offer an academic home for students who choose the unique environment of ASU East but do not wish to declare a major immediately, and
4. to develop new degree programs for ASU East

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

East College also offers support courses for the Bachelor of Applied Science (B.A.S.) degree. The applied science core (ASC) courses are upper-division courses specifically designed to build upon the mathematics and science base acquired in the Associate of Applied Science (A.A.S.) degree.

APPLIED SCIENCE CORE (ASC)

ASC 301 Contextual Uses of Algebra in Technology. (1)
fall and spring
Uses algebra to solve real-world technological problems using currently available computer software. Prerequisite: B.A.S. major.

ASC 302 Contextual Uses of Geometry in Technology. (1)
fall and spring
Uses geometrical concepts to solve real-world technological problems using currently available computer software. Prerequisite: B.A.S. major.

ASC 303 Contextual Uses of Trigonometry in Technology. (1)
fall and spring
Uses trigonometry to solve real world technological problems using currently available computer software. Prerequisite: B.A.S. major.

ASC 315 Numeracy in Technology. (3)
fall and spring
Contextual uses of mathematics in applied sciences. Emphasizes using mathematical methodologies to solve technology related problems. Prerequisite: B.A.S. major.

ASC 325 Physical Sciences in Technology. (4)
fall and spring
Physical systems and their interrelationships on technology systems. Real-world applications of physical systems. Lecture, lab. Prerequisite: B.A.S. major.

Partnership in Baccalaureate Education. Through the partnership with Chandler Gilbert Community College, ASU East students take first year composition courses and courses that meet lower division ASU General Studies requirements listed in the "General Studies," page 78. These courses are available in an innovative integrated first-year curriculum designed to foster academic success. Students can also take major prerequisite courses, introductory language courses, and other lower division courses of general interest through the partnership.

East College/No Preference Majors. Students who would like to start their college careers at ASU East to benefit from the unique campus environment can declare "East College/No Preference" as an interim major while completing the General Studies requirements and searching for an ASU major that serves their personal and career objectives. East College provides advising for No Preference majors.

DEGREE PROGRAMS

See the "East College Baccalaureate Degrees and Majors" table, page 621. For graduate degrees, see the "East College Graduate Degrees and Majors" table, page 622.

East College also offers certificate programs in Multimedia Writing and Technical Communication, minors in Food and Nutrition Management and Human Nutrition, and a concentration for the B.A.S. See the *Graduate Catalog* for more information about graduate programs.

OTHER NEW PROGRAMS

East College has been authorized to plan a B.S. degree in Human Health, which is currently under development. For more information, access the East College Web site at www.east.asu.edu/ecollege.

INTERDISCIPLINARY STUDIES—B.I.S.

The Bachelor of Interdisciplinary Studies (B.I.S.) is a university wide program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations and an interdisciplinary core, students in the B.I.S. are expected to take an active role in creating their educational plan and defining their career goals. The B.I.S. emphasizes written communication, versatility, and critical thinking, skills desired in a changing workplace environment. 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

East College Baccalaureate Degrees and Majors

Major	Degree	Concentration	Administered By
Applied Psychology	B S		East College
Applied Science	B A.S.	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.		East College
Interdisciplinary Studies	B.I.S.	See "B.I.S. Concentrations" table, page 109.	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

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, ASU West, 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 should arrange an appointment with an East College advisor at 480 727 1515 before declaring the B.I.S. major.

Basic Requirements

The B.I.S. requires 120 semester hours. The major is composed of a 12 hour core and a minimum of 36 hours in two concentrations (18 hours 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 302 and 401 may be taken concurrently. 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 111.

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 following requirements must be met:

1. 45 semester hours of college credit completed;
2. cumulative GPA of 2.00 for continuing ASU students or in state transfer students, 2.50 for out of state transfers, and
3. selection of two concentrations with a minimum of two courses in each (minimum grade of "C") completed or one completed and one in progress (i.e., after the drop add period) in each area.

Approved Concentrations

Each concentration requires 18 semester hours, with each course completed with a grade of "C" or higher. Twelve of the 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 1515.

NOTE: For the General Studies requirement courses and codes such as L, SQ, C, and H, see "General Studies," page 78. For graduation requirements, see University Graduation Requirements, page 74. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 51.

East College Graduate Degrees and Majors

Major	Degree	Concentration	Administered By
Curriculum and Instruction	Ph.D	Exercise and wellness education	Interdisciplinary Committee on Curriculum and Instruction
Exercise and Wellness	M.S.		East College
Nutrition	M.S.		Department of Nutrition

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

Faculty of Applied Psychology

Roger W. Schvaneveldt
Faculty Head
(CNTR 78) 480/727-1066

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 engineering technologies, 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 [illegible]), and major requirements, leads to the B.S. degree. The major allows for at least 24 semester hours of electives. The major requirements for the B.S. degree in Applied Psychology consist of a 25-hour core of psychology courses, 12 hours in applied psychology, and 18 hours of related course work.

Core Courses (25 hours). 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	35[illegible]	Social Psychology *SB*	3
PSY	2[illegible]	Introduction to Statistics *CS*	3
PSY	[illegible]9	Research Methods *L/SG*	4
PSY	[illegible]2	Sensation and Perception	3
PSY	3[illegible]4	Memory and Cognition	3
PSY	32[illegible]	Physiological Psychology	3
PSY	477	Applied Psychology Capstone Experience or HON 49[illegible] Honors Thesis (3)	3
Total			25

This PSY course is offered only by ASU East.

Applied Psychology Courses (12 hours). Students work with an advisor to select courses in Applied Psychology emphasizing human computer interaction (HCI), aviation, training, manufacturing, or methods. Course work must include a minimum of four of the following courses.

AMT	41[illegible]	Aviation Safety and Human Factors	3
PGS	471	Psychological Testing	3
PSY	[illegible]32[illegible]	Learning and Motivation	3
PSY	33[illegible]	Statistical Methods *CS*	3
PSY	360	Cognitive Science*	3
PSY	39[illegible]	Experimental Psychology *L*	3
PSY	437	Human Factors *L*	3
PSY	438	Human Computer Interaction*	3
PSY	439	Training and Skill Acquisition	3
PSY	44[illegible]	Industrial/Organizational Psychology	3
PSY	494	Special Topics	1–4

* This PSY course is offered only by ASU East.

Sample 12-hour Course Sets

Human Computer Interaction
PSY 437 Human Factors
PSY 438 Human Computer Interaction
PSY 44[illegible] Industrial/Organizational Psychology
PSY 494 Special Topics

Aviation
PSY 437 Human Factors
PSY 438 Human Computer Interaction
PSY 44[illegible] Industrial/Organizational Psychology
AMT 410 Aviation Safety and Human Factors

Manufacturing
PSY 437 Human Factors
PSY 438 Human Computer Interaction
PSY 439 Training and Skill Acquisition
PSY 440 Industrial/Organization Psychology

Training
PSY 320 Learning and Motivation
PSY 437 Human Factors
PSY 439 Training and Skill Acquisition
PSY 440 Industrial/Organizational Psychology

Methods
PSY 330 Statistical Methods
PSY 360 Cognitive Science
PSY 390 Experimental Psychology
PGS 471 Psychological Testing

Related Course Work

BIO	120	Human Physiology *SG* or BIO 181 General Biology (4) or BIO [illegible]93 The Nature of Biological Science *SQ* (4) or BIO [illegible]0[illegible] Human Anatomy and Physiology I *SG* (4)	4
MAT	210	Brief Calculus	3
A computer programming course			3
Courses selected in consultation with an advisor			8
Total			18

For more nformation 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 437

PSYCHOLOGY (PSY)

For more PSY courses see Department of Psycho ogy under Co lege of L bera Arts and S ences

E PSY 360 Cognitive Science. (3)
once a year
Exam nes cogn tion fr m the var ed perspectives f ph osophy, n gu st cs psycho ogy computer sc ence art f c al nte gence and neurosc ence. Lecture d scuss n Prerequ s te PSY 324

E PSY 438 Human-Computer Interaction. (3)
once a year
Theor es methods a d f nd ngs concern ng the usab ty of computer systems and the de gn of effect ve user interfaces Lecture d scus sion pro'ects. Prerequ s te PSY 437

E PSY 439 Training and Skill Acquisition. (3)
once a year
Theor es, methods and f nd ngs concern g the acqu s tion of sk ed performance and the des gn of effect ve tra n ng systems Lecture d s cuss on, pr jects Prerequ s te PSY 437

E PSY 440 Industrial/Organ zational Psychology. (3)
once a year
Exam nes pers nne se ect on performance assess ent, job and workp ace des gn, job sat sfact on, organ zat ona behav or manage ment sy tems and ndustr a safety Lecture d scuss on projects Pre requ site: PSY 230 or an equiva ent stat st cs course

E PSY 477 Applied Psychology Capstone Experience. (3)
once a year
App ed psycho gy fr m a systems perspect ve Requ res a report based on research and/or app ed work as a cu m nat g exper ence Lecture d scuss on, projects Prerequ s te se r stand ng

Faculty of Business Administration

Roger W. Hutt
Faculty Head
(CNTR 76) 480/727-1055

BUSINESS ADMINISTRATION—B.S.

The B.S. degree in Business Administration offers a sur vey of conten porary 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 bus ness, industry, or government as well as for career advancement and entrepreneurial enter prises. This program operates under the umbrella of the ASU Main College of Business AACSB accreditation, but it is offered through East College Students seeking admission to the professional program must have completed 56 semes ter hours in good standing, ncluding 30 hours of skill courses see "Business Core Requirements," page 154) The major requires an addit onal 33 hours, including a 15 hour core seven hours of profess onal proficiency courses, and 11 hours of business advanced electives. Students may choose to take add tional business courses, related courses in industry specific bus ness programs at ASU East (e.g. agr business, nformation and management technology, and aeronautical management techno ogy), or a special optional 12 hour extension of the basic n ajor in industry specific programs

For the atest information about applicat on, admissions, program requirements, and courses, ca l an East College advisor at 480 727 1515, or access the Web site at www east.asu.edu/ecollege/businessadm in.

Faculty of Elementary Education

Bette S. Bergeron
Faculty Head
(CNTR 82) 480/727-1303

PROFESSOR
BERGERON

LECTURER
WENHART

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. Elementary Education students are immersed in field experiences each semester 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 incorpo rated into course delivery and assignments. Additionally, students have the opportunity to choose between the Ele mentary Education program at the ASU East campus or par ticipate in one of the campus's district based school partner ships.

Program 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, stu dents will complete ASU General Studies (see "General Studies" section, page 78 requirements In addition, Ele mentary Education students are required to complete 18 semester hours in an academic specialization, which is tailored to an nd v dual student's academic strengths e g., math, sc ence, socia studies, English . The remaining program hours, which specifically focus on the teaching

NOTE: For t e Genera Stud es requ rement courses and codes such as L SQ C and H see Genera Stud es " page 78. For graduat on requ rement see Un vers ty Graduat on Requ rements," page 74 F r an exp anat on of add t o a omn bus cour es offered but not sted n th s cata og see C ass f cat on of Courses page 51

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 course descriptions see "College of Education," page 188.

Professional Preparation Program*

Block I (11 12 hours)

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 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 (11–12 hours)

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–

Block III (11–12 hours)

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 (12 14 hours)

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

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

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

For more information, visit CNTR 82, or call 480 727 1303.

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 Teacher 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/college/elementaryed, or call the ASU East Teacher Education Office at 480/727 1103

ELEMENTARY EDUCATION (EDC)

EDC 320 Integrated Learning Experience I: Learning Climate. (2)
fall and spring
Exploration of factors contributing to active 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 App ed 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 Prior 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)
fa and spring
Deve opmenta y appropr ate pract ces for teach ng and assess ng mathemat cs n grades K–8 App ed nqu ry Prerequ s te MTE 180 Corequ s te EDC 474 Pre or corequ s te EDC 325

EDC 350 Educational Technology I: Applications. (1)
fall and spring
Modu e focused on bas c techno og ca sk s needed for manag ng c assroom nstruct n Lab

EDC 351 Educational Technology II: Instruction and Evaluation. (1)
fa l and spring
Modu e focused on techno ogy as an nstruct onal med um eva uat on, and effect ve c assroom use. Lab Prerequ s te EDC 350

EDC 352 Educational Technology III: Design. (1)
fall and spr ng
Modu e focused on nstruct ona des gn ut z ng a var ety of techno gies nc ud ng mu t med a Lab Prerequ s te EDC 351

EDC 355 Accommodating Instruction for Diverse Learners. (3)
fa and spring
dent fy ng and accommodat ng earners w th spec a needs, nc d ng c assroom adaptat ons in nstruct on and assessme t Forum pract cum Prerequ s te SPE 311 Corequ's te· EDC 474 Pre or corequ - s te EDC 325

EDC 420 Integrated Learning Experience III: Assessment. (2)
fall and spr ng
Pnnc p es re ated to c assroom assessment nc ud ng the a gnment of assessment to curncu um test nterpretat on and a var ety of assessment techn ques. Interact ve forum Prerequ s te EDC 325

EDC 425 Integrated Learning Experience IV: Professional Knowledge. (2)
fa l and spring
Exp orat on of ssues re ated to profess ona know edge nc ud ng nterd sc p nary nstruct on and the impact of the commun ty on stu dents earning nteract ve forum Prerequ s te EDC 420. Corequ s te EDC 484

EDC 430 Literacy III: Interventions. (3)
fal and spring
Strateg es for accommodat ng students strugg ng w th earn ng w th a focus on the areas of teracy acqu s tion and assessment Forum pract cum Prerequis tes EDC 335 355 Corequ s te EDC 474 Pre or corequ s te EDC 420

EDC 440 Science Methods for the Elementary Classroom. (3)
fal and spr ng
Deve opmenta y appropr ate pract ces for teach ng and assess ng sc ences n grades K–8. App ed nqu ry Prerequ s tes EDC 325 345 Corequ site: EDC 474 Pre or c requ s te EDC 420

EDC 450 Social Studies Methods for the Elementary Classroom. (3)
fa l and spring
Developmenta y appropr ate pract ces for teach ng and assess ng social stud es n grades K–8 Appl ed nqu ry. Prerequ s tes EDC 325 335 Corequ s te: EDC 474 Pre- or c requ s te EDC 420

EDC 474 Field Experience. (0–1)
fa and spring
App cat on of course content n a K–8 schoo Emphas s on observa t on, c assroom management p ann ng and de very of nstruct on and assessment Pract cum. Corequ s te a methods courses n the teacher preparat on program must be taken w th F e d Exper ence

EDC 484 Student Teaching in the Elementary School. (10–12)
fall and spring
Superv sed teach ng n the area of spec a izat on Capstone nternsh p n curr cu um instruction, and c assroom management nternsh p Prerequ sites 2 50 GPA, comp et on of profess ona course sequence approval of ASU East teacher preparat on off ce. Corequ s te EDC 425

Department of Exercise and Wellness

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PROFESSORS
CORBIN STONE

ASSOCIATE PROFESSOR
SWAN

ASSISTANT PROFESSOR
PHILLIPS

LECTURERS
JONES, WOODRUFF

EXERCISE AND WELLNESS—B.S.

The B.S. degree in Exercise and Wellness consists of 66 semester hours, including 21 semester hours of required EXW core courses.

The required core courses are as follows.

Required courses

EXW 300	Foundations of Exercise and Wellness *SB L*	3
EXW 310	Computer Skills and Technology for Exercise and Wellness	3
EXW 347	Health Behavior Change	3
EXW 450	Cultural/Social Issues n Exercise and Wellness	3
EXW 484	EXW Internship	6
NTR 24	Human Nutrit on	3
Total		21

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

BIO 201	Human Anatomy and Physiol gy I *SG*	4
BIO 202	Human Anatomy and Physiology II	4
CHM 101	Introductory Chemistry *SQ* or any equiva ent chemistry	4
COM 225	Public Speakino *L*	3
PGS 101	Introduction to Psychol gy *SB*	3
Total		18

Al prerequisite and EXW courses must be completed with a minimum grade of "C " Additional requirements for the major are described below.

EXW 212	Instruct cnal Competency Laboratory	6
EXW 315	Physiological Foundations of Movement	3
EXW 320	Program Development and Leadership.	3
EXW 330	Kinesiological Foundatic ns of Movement	3
EXW 400	Stress Management for Wellness	3
EXW 420	Exercise Testing	3
EXW 425	Exe cise Prescription	3

NOTE: For the General Stud es requ rement courses and codes such as L SQ C and H see Genera Stud es page 78 For graduat on requ'rements, see "Un vers ty Graduat on Requ rements " page 74. For an exp anat on of add t ona omn bus courses offered but not sted n th s catalog see "C ass f cat on of Courses " page 51

Elective* 3

Total 27

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

EXERCISE AND WELLNESS MINOR

The minor in Wellness Foundations consists of the following plus all prerequisite courses

EXW 300 Foundations of Exercise and Wellness	3
EXW 325 Fitness for Life	3
EXW 342 Health Behavior Change	3
EXW 450 Cultural Social Issues in Exercise and Wellness	3
EXW elective*	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.

GRADUATE PROGRAMS

The faculty in the Department of Exercise and Wellness offer programs leading to the M.S. degree in Exercise and Wellness.þ 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.þ 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, spring, summer
Current concepts in health, exercise and wellness. Emphasis placed on personal health theories, attitudes, beliefs and behaviors. Cross listed as EPE 100/HES 100. Credit is allowed only for EPE 100 or EXW 100 or HES 100.
General Studies. SB

EXW 105 Physical Activity Instruction: Beginning. (1)
fall and spring
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 and spring
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)
fall and spring
Historical overview of health promotion and wellness models as they relate to minority, gender, social, cultural, economic, international and environmental issues.

EXW 300 Foundations of Exercise and Wellness. (3)
fall and spring
Analysis of 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)
fall and spring
Use of computers to statistically analyze data and design presentations of findings. Design of health promotion, education and application and presentations. Lecture/lab. Prerequisite: MAT 117.

EXW 315 Physiological Foundations of Movement. (3)
fall and spring
Studies human movement with emphasis on physiological functions 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 and spring
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 programming 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)
fall and spring
Study and considerations of 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 and spring
Examines major theories of health behavioral change. Developing interventions strategies and techniques employed to facilitate health behavioral change. Prerequisite: PGS 101.

EXW 380 Body Image and Wellness. (3)
fall and spring
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 and spring
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 and spring
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 and spring
Theoretical bases 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)
fa l and spring
Exam nes the ro e of physica act v ty and f tness n the development of morbidity and morta ty throughout the human fe span Prerequ - s te EXW 315
General Studies. L

EXW 450 Cultural and Social Issues in Exercise and Wellness. (3)
fa l and spring
Exam nes contemporary cu tural and soc al ssues in phys ca act v ty Focus on theor es of soc a behav or rac al ethn'c and cultura d ffer ences. Prerequ s te PGS 101

EXW 484 Exercise and Wellness Internship. (6)
fall, spring summer
Supervised pract cum exper ence n approved exerc se and we ness/ hea th promot on agenc es F e d work Prerequ s tes EXW 310 320 420 Pre- or corequis te· EXW 425

EXW 500 Research Methods. (3)
fall
ntroduct on to the bas c aspects of research nc ud ng prob em se ec- t on terature rev ew instrumentat on data hand ng methodo ogy and wr ting the report.

EXW 501 Research Statistics. (3)
spring
Stat st ca procedures; sampl ng techn ques hyp thes s test ng and exper menta des gns as they re ate to research publ cat ons

EXW 505 Applied Exercise and Wellness Laboratory Techniques. (3)
spring
Invest gat ve techn ques used n the app ed exerc se testing/prescrip t on laboratory Emphas s on card oresp ratory assessment, energy balance, body compos't on, and electrocard ography Lecture ab Fee

EXW 534 Sports and Fitness Conditioning. (3)
fall
Bases of sports and f tness cond tion ng, nc ud ng aerob c and anaer ob c power strength f exib ity and ana ys s of cond t on ng compo nents for sports and f tness

EXW 536 Physiological Aspects of Physical Activity and Chronic Disease. (3)
fall
Ro e of phys olog ca mechan sms assoc ated w th acute and long term physica act v ty and ts inf uence o chron c d sease and we ness.

EXW 542 Health Promotion. (3)
spr ng
Theory and research concern ng fitness and we ness programs n nutr t on, phys cal act vity smoking cessat on, and stress manage- ment

EXW 544 Fitness/Wellness Management. (3)
spring
Deve opment of the f tness we ness ndustry P ann ng, organ z ng promot ng, and manag ng f tness we ness programs.

EXW 575 Teaching Lifetime Fitness. (3)
spring
Organ z ng and mplement ng physical f tness programs n the schoo s w th emphas s on nd v dua prob em solving

EXW 599 Thesis. (1 12)
not regu arly offered

EXW 642 Exercise Epidemiology. (3)
spring
Phys cal act v ty, exerc se and phys'cal f tness and the deve opment of chron c disease

Faculty of Multimedia Writing and Technical Communication

Barry M. Maid
Faculty Head
(CNTR 80) 480/727-1190

PROFESSOR
MAID

ASSOCIATE PROFESSOR
BARCHILON

MULTIMEDIA WRITING AND TECHNICAL COMMUNICATION—B.S.

In the Multimedia Writing and Techn cal Communication program, students learn how to produce, to design, and to manage information using both trad tional and developing technologies.

Students learn

1. to communicate, both orally and in writing, across audiences and cultures,
2. issues of ethics in technical communications;
3. awareness of the global nature of technical commu- nication both culturally and economically;
4. the ability to evaluate print, oral, and electronic sources;
5. understanding of appropriate technica genres;
6. the abi ity to demonstrate technical editing skills in all work,
7. the ability to incorporate appropriate visual elements and design in written documents and oral presenta tions, and
8. the ability to work ii appropriate media

The program serves students who wish to pursue careers as technical writers, technical editors, Web page and intra net page designers, multimedia designers, and desktop pub lishers, publications managers, and informat on designers

GRADUATION REQUIREMENTS

To graduate with a B S degree in Multimed'a Writing and Technical Communication, students must complete a minimum of 120 semester hours, including university grad uation requirements and requirements of the ma or.

Multimedia Writing and Technical Communication Core

TWC 301	General Pr nciples of Mu timedia Writ ng	3
TWC 401	Pr nc ples of Technical C mmunication	3
TWC 41	Pr nc ples of V sual Cc mmunicat on ...	3
TWC 421	Prii ciples of Writing with Technology	3
TWC 431	Princ ples of Technica Edit'ng. . .	3
TWC 490	Capstone	3
Total		18

NOTE: For the Genera Stud'es requ rement courses and codes (such as L SQ C and H see "Genera Studies " page 78. For graduat n requirements, see "Un vers ty Graduat on Requ rements page 74. For an exp anat on of add t onal omn bus courses offered b t not sted in th s catalog see "Class f cat on of Courses " page 51

Related Area (12 hours). Students select a related area consisting of 12 semester hours of study in one other discipline At least nine of these 12 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.

Electives (15 hours). The remaining hours will be 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.

BACHELOR OF APPLIED SCIENCE DEGREE

A Bachelor of Applied Science is a so 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 ho ding an A A S. degree or equivalent from a regional y 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. n 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	2
Total	60

General Studies Curriculum (19 hours). 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
HL or SB	3
SB	3
SG	4
Total	19

Assignable Credit (6 hours). Assignable credit allows space in the curriculum for prerequisite courses needed for students to succeed in the program. The courses are determined by the student and an advisor

B.A.S. core (15 hours). The area core is focused on management and organization, professional communication qualitative analysis, and computer competency

Multimedia Writing and Technical Communication concentration (20 hours). In consultation with an advisor, students will select 20 hours of upper division TWC courses.

CERTIFICATE

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

TWC 301	General Principles of Multimedia Writing	3
TWC 401	Principles of Technical Communication	3
TWC 4	Principles of Visual Communication	3
	or TWC 421 Principles of Writing with Technology	3
	or TWC 431 Principles of Technical Editing	3
Three 4	level TWC courses, at least two of which must be genre courses, such as TWC 443 Proposal Writing or TWC 447 Business Reports	9
Total		18

MULTIMEDIA WRITING AND TECHNICAL COMMUNICATION (TWC)

TWC 194 Special Topics. (1–4)
not regularly offered

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

TWC 294 Special Topics. (1–4)
not regularly offered

TWC 301 General Principles of Multimedia Writing. (3)
fall and spring
Introduction to 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 General Studies L course sequencing 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 rhetorical and audience analysis Prerequisite: TWC 301
General Studies L

TWC 403 Writing for Professional Publication. (3)
not regularly offered
Analyzes the market and examines the publication process including the roles of the author editor and reviewer Prerequisite: 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 Prerequisite 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 Prerequisite TWC 4 1
General Studies L

TWC 431 Principles of Technical Editing. (3)
fa l and spr ng
Basic princ ples of techn ca ed t ng (for pr nt and electron c med a) nc ud ng copyed t ng rev ews, standards sty e and project manage ment. Pre- or corequ s te. TWC 401
Genera Stud es L

TWC 443 Proposal Writing. (3)
once a year
Deve ops persuas ve strateg es and themes for research ng and wr t- ng profess ona proposa s Pre or corequ s te TWC 401

TWC 444 Manual and Instructional Writing. (3)
once a year
Des gn and deve opment of a user manual, wr t ng nstruct ons mprov ng graph cs and page des gn and usab ty test ng Pre or corequ s te TWC 401

TWC 445 Computer Documentation. (3)
once a year
ntroduct on to wr ting documentation for the computer ndustry Pre- or corequisite TWC 401

TWC 446 Technical and Scientific Reports. (3)
once a year
ntroduct on to strateg es f rmats and techn ques of present ng nfor mat on to techn ca and sc ent f c audiences Pre or corequisite TWC 401
General Stud es L

TWC 447 Business Reports. (3)
once a year
Introduction to strateg es formats and techn ques of present ng nfor mat on to bus ness and other workplace aud ences. Pre or corequ site TWC 401
General Studies L

TWC 484 Internship. (3)
fa and spr ng
App es classroom work n a superv sed workp ace env ronment Pre or corequ s te TWC 411 or 421 or 431

TWC 490 Capstone. (3)
fal and spr ng
Deve opment of a profess ona portfo o creat on of a cu m natng document and synthes s of undergraduate exper ence Prerequ s te nstructor approval.

TWC 494 Special Topics. (1–4)
not regu arly offered

TWC 501 Principles of Technical Communication. (3)
fall and spring
Bas c nformat on des gn pr nc p es to produce effect ve wr tten oral, and e ectron c techn ca commun cation Understanding of rhetorical and aud ence ana ysis Pre- or corequisite, graduate stand ng

TWC 503 Writing for Professional Publication. (3)
not regu arly offered
Analyzes the market and exam nes the pub cat on process nc ud ng the ro es of the author edit r and rev ewer Pre or corequisite: TWC 501

TWC 511 Principles of Visual Communication. (3)
fal and spr ng
Bas c pr nciples of v sual c mmun cat on n pr nt and electron c media Understand ng graph c and document des gn nc ud ng typography and co or Pre- or corequ s te TWC 501

TWC 521 Principles of Writing with Technology. (3)
fal and spring
Understand ng h stor ca and soc a mpact of technology on wr t ng w th emphas s on mult media des gn computer med ated commun ca t on and hypertext Pre or corequ s te TWC 501

TWC 531 Principles of Technical Editing. (3)
fall and spr ng
Basic pr nc p es of techn ca ed t ng for pr nt and e ectronic med a, nc ud ng copyed t ng, rev ews standards sty e and project manage ment Pre or corequisite TWC 501

TWC 543 Proposal Writing. (3)
once a year
Deve ops persuasive strateg es and themes for research ng and wr t ng profess na proposa s. Pre- or corequ s te TWC 501

TWC 544 Manual and Instructional Writing. (3)
once a year
Design and deve opment of a user manua writing instructions, mprov ng graph cs and page design and usab l ty test ng Pre or corequ s te TWC 501

TWC 545 Computer Documentation. (3)
once a year
Introduct on to wr t ng documentat on for the computer ndustry Pre or corequ s te TWC 501

TWC 546 Technical and Scientific Reports. (3)
once a year
ntroduct on to strateg es formats, and techn ques of present ng nfor mat on to techn cal and sc entif c audiences Pre- or corequ s te TWC 501.

TWC 547 Business Reports. (3)
once a year
ntroduct on to strateg es formats and techn ques of present ng nfor mation to bus ness and ther workplace aud ences Pre- or corequi- s te TWC 501

TWC 584 Internship. (3)
fa l and spr ng
Appl es c assroom work n a superv sed workp ace env ronment Pre or corequ s tes TWC 511, 521 531

TWC 598 Special Topics. (1–4)
not regular y offered

Department of Nutrition

Linda A. Vaughan
Chair
(HSC 1386) 480/727-1728

PROFESSORS
JOHNSTON, MANORE VAUGHAN

ASSOCIATE PROFESSOR
MONTE

ASSISTANT PROFESSOR
HAMPL

SENIOR LECTURER
MART N

LECTURER
DIXON

NUTRITION—B.S.

The B.S. degree in Nutrition offers three concentrations dietetics, human nutrition, and food and nutrition manage ment. The dietetics concentration provides students with a comprehensive range of nutrition, foods, and science courses that meet the academic (didactic) requirements nec- essary to become a registered dietitian. This concentration has been granted Developmental Accreditation as a Didactic Program in Dietetics (DPD) by the Commission on Accred itation for Dietetics Education of the American Dietetic Association. Graduates of a DPD may apply for Dietetic Internships to establish eligibility to write the Dietetic Reg istration examination.

The human nutrition concentration provides a sound foundation in the basic sciences and nutrition, but no foods

NOTE: For the Genera Stud es requ rement, courses and codes (such as L, SQ, C and H see "Genera Stud es " page 78 For graduat on requirements see Un versity Graduation Requ rements " page 74. For an exp anat on f add t ona omn bus courses offered but not sted in th s catalog see "C ass f cat on of Courses " page 51

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 Developmental 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 1 800 877 1600, extension 5400, 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 241 Human Nutrition	3
NTR 341 Introduction to Planning Therapeutic Diets	3
NTR 343 Food Service Purchasing	3
NTR 344 Nutrition Services Management	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 Diet Therapy	3
NTR 445 Quantity Food Production	3
NTR 446 Human Nutrition Assessment Lecture/Laboratory	3
NTR 448 Community Nutrition	3
Total	39

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 233 Elementary Organic Chemistry *SQ*	3
CHM 235 Elementary Organic Chemistry Laboratory *SQ*	1
MIC 205 Microbiology *SG*	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 341 Introduction to Planning Therapeutic Diets	3
NTR 440 Advanced Human Nutrition I	3
NTR 441 Advanced Human Nutrition II	3
NTR 444 Diet Therapy	3
NTR 446 Human Nutrition Assessment Lecture/Laboratory	3
Total	21

An additional nine 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.

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 I	4
CHM 113 General Chemistry *SQ*	4
CHM 116 General Chemistry *SQ*	4
CHM 233 Elementary Organic Chemistry *SQ*[1]	3
CHM 235 Elementary Organic Chemistry Laboratory *SQ*[1]	1
MIC 205 Microbiology *SG*	3
MIC 206 Microbiology Laboratory *SG*	1
Total	26

[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 101 Introductory Nutrition or NTR 241 Human Nutrition	3
NTR 142 Applied Food Principles	3
NTR 343 Food Service Purchasing	3
NTR 344 Nutrition Services Management	3
NTR 442 Experimental Foods	3
NTR 445 Quantity Food Production	3
Total	18

An additional twelve 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 requirement of this concentration:

CHM 101 Introductory 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
Business or technical writing course	3

Management AGB 310 or MGT 301, 380, or 394)	3
Marketing AGB 320 r MKT 300 or 394	3
Other agribusiness or business courses[3]	6
Total	27

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

[3] 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, and QBA. Students select these courses in consultation with the Nutrition academic advisor

MINOR

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
NTR 142 Applied Food Principles	3
NTR 300 Computer Applications in Nutrition	3
NTR 343 Food Service Purchasing or NTR 344 Nutrition Services Management	3
NTR 442 Experimental Foods	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 341 Introduction to Planning Therapeutic Diets	3
NTR 440 Advanced Human Nutrition I	3
NTR 441 Advanced Human Nutrition II	3
NTR 444 Diet Therapy	3
Total	15

One additional upper division (or graduate) course must be selected from among the following:

NTR 348 Cultural Aspects of Food	3
NTR 350 Nutrition Counseling	3
NTR 446 Human Nutrition Assessment Lecture Laboratory	3
NTR 448 Community Nutrition *L*	3
NTR 450 Nutrition in the Life Cycle I	3
NTR 451 Nutrition in the Life Cycle II	3
NTR 531 Recent Developments in Nutrition	3
NTR 532 Current Research in Nutrition I	3
NTR 598 Special Topics	3

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 241 Human Nutrition. (3)
fall spring summer
Principles of human nutrition Emphasis on nutrient metabolism and the relationships between diet and disease Prerequisite CHM 101 or its equivalent

NTR 300 Computer Applications in Nutrition. (3)
spring
Introduction to nutrition and food software including dietary assessment and analysis, food inventory and control and telecommunications Lecture computer lab NTR 341 strongly recommended Prerequisites NTR 100 or 241 basic computer literacy

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 Prerequisites NTR 100 (or 241 and 142 (or their equivalents)

NTR 343 Food Service Purchasing. (3)
fall
Introduction to 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)
spring
Organization administration, and management of food and nutrition services in hospitals and other institutions Field trip may be included Prerequisites. NTR 100 (or 241 and 142 (or their equivalents
General Studies L

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 settings nutrition education for individuals and populations Lecture lab. Prerequisites NTR 100 (or 241) and 142 or their equivalents

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 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 or their equivalents

NTR 442 Experimental Foods. (3)
fall and spring
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 Diet Therapy. (3)
spring and summer
Principles of nutritional support for prevention and treatment of disease Prerequisites BIO 201 and 202 and NTR 241 or their equivalents .

NOTE: For the General Studies requirement courses and codes such as L SQ C, and H , see General Studies page 78 For graduation requirements see "University Graduation Requirements page 74 For an explanation of additional omnibus courses offered but not listed in this catalog, see Classification of Courses, page 51

NTR 445 Quantity Food Production. (3)
fa l and spring
Standard zed methods of quant ty food preparat on operat on of n t- tut ona equ pment nst tut ona menu p ann ng quant ty food exper ences. May requ re f e d tr ps Lecture lab Fee Prerequ s tes NTR 100 or 241) and 344 or the r equiva ents

NTR 446 Human Nutrition Assessment Lecture/Laboratory. (3)
spr ng
C n cal and b ochem ca eva uat on of nutr t ona status 2 h urs ec ture, 3 hours ab Fee Prerequisites BCH 361 367 NTR 440 or 441)

NTR 448 Community Nutrition. (3)
fa and spr ng
Food related behav ors organ zat on and de very of nutr t on ser v ces program design mp ementat on and eva uat on st ategies n tr t on assessment of popu ations. Prerequ s te NTR 241 (r ts equ va ent
General Studies L

NTR 450 Nutrition in the Life Cycle I. (3)
fall
Emphas s on nutr t ona needs and problems dur ng pregnancy acta tion nfancy, and ch dhood Prerequ s te NTR 100 or 241 or ts equ va ent

NTR 451 Nutrition in the Life Cycle II. (3)
spring
Nutritiona requ rements and nutr t on re ated d sorders of ado es cence m dd e adu thood and ater fe Prerequ s te NTR 1 0 r 241 or ts equ va ent).

NTR 500 Research Methods in Nutrition. (3)
fa
Experimenta des gn methods of data co ect on aboratory ana yses, and statist ca ana yses, deve opment of thes s pr posa ecture ab Fee. Prerequ sites 1 course each n advanced nutr t on, b o hem stry and stat st cs

NTR 531 Recent Developments in Nutrition. (1)
fal and spr ng
Se ected top cs address ng current ssues n nutr t on research Pre requ s tes 1 course each in advanced nutrit on and b ochem try

NTR 532 Current Research in Nutr tion. (3)
spr ng
V tam ns and m nera s Prerequisites 1 course each n advan ed nutr t on and b ochem stry

NTR 540 Advanced Micronutrient Metabolism. (3)
fa l
Metabo sm of v tam ns and m nera s pr mar y as app ed to humans, w th research terature emphasized Prerequ s tes· 1 cou se each n bas c nutr t on and biochem stry

NTR 541 Advanced Macronutrient Metabolism. (3)
spr ng
Metabo sm of prote n fat and carbohydrate, pr mari y as app ed to humans w th research terature emphas zed Prerequ s tes 1 course each n bas c nutr tion and biochem stry

NTR 542 Advanced Food Product Development. (3)
fa and spr ng
Food product deve opment techn ques food eva uat on and test ng and nvest gat n f cu rent esear h nto food c mpos t n 2 hours ecture 3 hours ab Fee Prerequ s tes CHM 231 and NTR 142 or the r equ va ents

NTR 544 Therapeutic Nutrition. (3)
spr ng and summer
Current theor es of the nutr t ona prevent n r treatment of var ous d seases Prerequ s tes 1 course each bas c nutr t on ntr duct on to d et the apy and phys o ogy

NTR 545 Recent Developments in Institutional Feed ng. (3)
fa and spr g
Current pract ce n st t t ona feed ng nc ud g superv sed pract cum w th oca quant ty food operat on 1 ho r e t re, 6 hours ab. Fee Prerequ s tes NTR 142 and 344 or the r equ va ents

NTR 546 Assessment Techniques in Nutrition. (3)
spr ng
C n ca and b ochem ca evaluat n of nutr t ona statu 2 hours ec t re 3 hours ab Fee Pre equ s tes 1 course each advanced nutr t on, b ochem stry, and phys o ogy

NTR 548 Nutrition Program Development. (3)
fa and spr ng
P ann ng deve opment mp ementat n, and eva at on of c mmun ty nut t on prog ams nc ud ng the proce s f grant app cat ns Prereq u s tes 1 co rse each n bas c nutr t on and s c o ogy

NTR 550 Advanced Maternal and Child Nutrition. (3)
fa
n depth rev ew of metabo c character st cs and nutr t ona needs of the pregnant woma actat ng woman, nfant and ch d Prerequ s tes 1 course eac in bas c nutr t n, b ochem stry and phys o ogy

NTR 551 Advanced Geriatr c Nutrition. (3)
spr g
epth rev ew f metabo c character st c a d nutr t ona requ re ments of the e der y Prerequ s tes: 1 course each n bas c nutr t on b chem try and phys o ogy

NTR 580 Dietetics Practicum. (3–9)
fa spr ng summe
Structured pract ca exper ence n the D etet c nternsh p, superv sed by practit oners with wh m the student w rks c ose y Practicum Pre req s te acceptance nto the D etet c Internsh p

NTR 592 Research. (1–12)
n t regu ar y offered

NTR 593 Applied Project. (1–12)
n t regu ar y offered

NTR 594 Conference and Workshop. (1 12)
not regu ar y offered

NTR 598 Special Topics. (1–4)
ot regu ar y offered
n depth rev ew of recent research n areas nc ud ng n tr t on and exerc se n tr t n and mmuno ogy energy ba an e vegetar an sm nutr t ona path phys o ogy Fee. Prerequ s tes 1 course each n advanced nutr t on, b ochem stry and phys o ogy

College of Technology and Applied Sciences

Albert L. McHenry, Dean

www.east.asu.edu/ctas

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, environmentally hazardous waste management, graphic communications, interactive computer graphics, 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 Manufacturing and Aeronautical Engineering Technology

DEGREES

See the "College of Technology and Applied Sciences Baccalaureate Degrees and Majors" table, page 634. For graduate degrees, see the "East College Graduate Degrees and Majors" table, page 622.

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 airway science flight management and the airway science 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, e-mail caa@auburn.edu, or write

COUNCIL ON AVIATION ACCREDITATION
3410 SKYWAY DRIVE
AUBURN AL 36830

ADMISSION—B.S. DEGREE

The College of Technology and Applied Sciences admits first year students who meet the undergraduate admission requirements of Arizona State University. See "Undergraduate Admission," page 54. High school precalculus, physics, and chemistry are recommended. Transfer applicants must meet the university requirements for transfer students as specified under "Transfer Credit," page 57, with the exception that Arizona resident transfer students must have a 2.25 GPA.

NOTE: For the General Studies requirement courses and designations such as L, SQ, C, and H, see "General Studies," page 78. For graduation requirements, see "University Graduation Requirements," page 74. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 51.

College of Technology and Applied Sciences Baccalaureate Degrees and Majors

Major	Degree	Concentration	Administered By
Aeronautical Engineering Technology*	B S		Department of Manufacturing and Aeronautical Engineering Technology
Aeronautical Management Technology*	B.S.	Airway science flight management, airway science management	Department of Aeronautical Management Technology
Applied Science	B.A S.	Aviation maintenance management technology, aviation management technology, computer systems administration, digital media man agement, digital publishing, emer gency management, fire service management, instrumentation, microcomputer systems, municipal operations management, operations management, production technol ogy, semiconductor technology, software technology applications, technical graphics	Bachelor of App ied 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, telecomn unications	Department of Electronics and Computer Ei gineering Technology
Industrial Technology	B.S.	Environmental technology management, industrial technology management, graphic information technology	Department of Information and Management Technology
Manufacturing Engineering Technology*	B.S.	Manufacturing engineer ng technology, mechanical engineering technology	Department of Manufacturin_ and Aeronautical Engineering Technology

This ma or requires more than 120 sen ester hours to con plete.

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

Professional Status

First year students new freshmen are admitted to CTAS with professional status if they meet the general aptitude cri teria 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 admit ted to CTAS with professional status if they have no remain ing admissions deficiencies and meet the requ red GPA

Transfer students from other institutions must meet the n inimum admission requirements for college transfer stu dents as described under "Transfer Credit," page 57. The CTAS also requires resident transfer students to have a cumulative GPA of 2 25.

A international students must have a minimum 50) TOEFL score to be admitted with professional status

Preprofessional Status

All other students are admitted with preprofessional sta tus and may apply for professional status after they have removed the deficiency that disallows awarding profess onal status Students with preprofessional status may not register for 300 and 400 level courses in the c ollege 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 57 Students who are transferring from an Arizona community c ollege 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 transferable 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 trans fer credit at the option of the department in which the appli cant wishes to enro l Courses completed within the five years preceding admission are udged as to their applicabil ity to the student's curriculum

College of Technology and Applied Sciences Graduate Degrees and Majors

Major	Degree	Concentration	Administered By
Technology	M S Tech	Global technology and development	College of Technology and Applied Sciences
		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
		Aeronautical engineering technology, manufacturing engineering technology, mechanical engineering technology, security engineering technology	Department of Manufacturing and Aeronautical Technology

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 74, 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 or summer session 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 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.

NOTE: For the General Studies requirement, courses and codes such as L SQ C and H see "General Studies page 78 For graduation requirements see University Graduation Requirements " page 74 For an explanation of additional omnibus courses offered but not listed in this catalog, see Classification of Courses page 51

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 68, 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 Craig and Barbara 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 Craig and Barbara Barrett Honors College," page 112

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
Introduction to computer-aided design, programming, modeling, and technical documentation Lecture lab
General Studies CS

ETC 191 First-Year Seminar. (1–3)
not regularly offered

ETC 194 Special Topics. (1–4)
not regularly offered

ETC 201 Applied Electrical Science. (4)
fall spring summer
Principles of electricity passive elements, and AC DC circuit analysis Laboratory exploration of circuits using instrumentation and the computer as tools Lecture lab Prerequisites: ETC 100 MAT 170; PHY 112 114.

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 spec al systems Fundamentals of conduction radiation, and convection Prerequisites: MAT 261· PHY 112, 114.

ETC 492 Honors Directed Study. (1–6)
not regularly offered

ETC 493 Honors Thesis. (1–6)
not regularly offered

Department of Aeronautical Management Technology

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PROFESSOR
GESELL

ASSOCIATE PROFESSORS
JACKSON McCURRY, TURNEY

ASSISTANT PROFESSORS
KARP PEARSON

LECTURER
O BRIEN

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. Students are cleared for enrollment in Airway Science Flight Management flight courses on a competitive basis. 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.

DEGREES

The faculty in the Department of Aeronautical Management Technology offer a B.S. degree in Aeronautical Management Technology with concentrations in airway science flight management and airway science 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: airway science flight management and airway science 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 78 , and the Aeronautical Management Technology Core. Note that all three General Studies awareness areas are required. Consult your 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 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
ETC 201	Applied Electrical Science	4
Total		36

Airway Science Flight Management Concentration

Flight training is certified by the Federal Aviation Administration. Students in the airway science flight management concentration must pass an FAA medical examination before flying solo. While this physical examination is not required for admission to the program, it must be completed before flying solo as the medical certificate becomes the student pilot certificate. An FAA Class II medical examination is required to complete the certificates and ratings necessary to meet graduation requirements. It is recommended that a Class I FAA medical examination be completed by an aviation medical examiner of the student's choice before the start of classes.

Airway science flight management combines academic studies and flight training to prepare graduates for a wide variety of positions within the air transportation industry, including general, airline, and military aviation. Ground school and flight training are available, allowing the student to obtain private pilot, commercial pilot, and flight instructor certificates and also the instrument pilot, instrument instructor, and multiengine pilot ratings.

This curriculum concentrates on flying plus the technical management and computer related applications necessary to operate in the high density environment of modern airspace. The program also emphasizes critical thinking, analytical skills, and oral and written communication skills. A career in airway science flight management leads to the development, administration, and enforcement of safety regulations, including airworthiness and operational standards in civil aviation.

While enrolled at ASU, students do not receive college credit for flight activity or instruction received at flight schools other than those entities with which the university has currently contracted for such instruction. Consideration is given for flight experience received before enrollment at the university through the private pilot certificate only.

Flight instruction costs are not included in university tuition and fees. The estimated cost of flight training is $36,000 in addition to normal university costs.

Degree Requirements

Airway science flight 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,"

NOTE. For the General Studies requirement, courses and codes such as L, SQ, C, and H, see "General Studies," page 78. For graduation requirements, see "University Graduation Requirements," page 74. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 51.

page 78 , and the Aeronautical Management Techno ogy core, the following additiona courses are required for the airway science flight management concentration:

AET 300	Aircraft Design I	3
AMT 1 0	Flight S ifety I	1
AMT 20(	F ght Safety II	2
AMT 214	Con mercial/Instr ment Ground Schoo I	3
AMT 300	Flight Safety III	2
AMT 322	C mmercial nstr ment Ground School II	3
AMT 38_	Air Navigatic n	3
AMT 385	Flight Instructor Gr und Sch ol	3
AMT 387	Multieng ne Pilot Ground Sch ol	1
AMT 392	Flight Instructor Instrument Ground School	2
AMT 400	Flight Safety IV	
AMT 40S	Nat onal Aviation P cy	3
AMT 444	Airport Mar agement and Planning	3
AMT 482	Airline Instrument Procedures	3
AMT 489	Airline Administrat o	3
AMT 496	Airline Air raft Systems Capstone	3
IMC 346	Manaeement Dynami s	3
Techn ca electives		6
Total		48

Suggested Course Pattern for Freshmen

First Semester

AMT 100	Flight Safety I	
AMT 1(1	Introd ctic n t Aerona tical Management Technolos y.	1
AMT S2	Private Pilot Gr und School	3
AMT 220	Av atic n Meteor logy	3
ENG 1(	First Year Comp s tion	3
MAT 17)	Precalculus *MA*	3
Total		14

Second Semester

AMT 214	Commercial/Instr ment Ground School I	3
ENG 02	First Year Composit n	3
ETC 100	Languages of echnolos y *CS*	4
MAT 260	Technical Calculus I *MA*	3
PHY 1 1	General Phy ics *SQ*	3
PHY 113	General Phys cs Laboratory *SQ*	1
Total		17

* Both PHY 111 and 113 n ust be taken to secure SQ cred t

Airway Science Management Concentration

The airway science management concentration is designed to prepare graduates for managena and supervi sory positions throughout the air transportation industry An in depth technical education is included along with broad exposure to business and management courses. This pro gram 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 man ager, and general aviation operations manager.

Degree Requirements

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

Concentration Requirements

In addition to the required courses for First Year Compo sition, university General Studies see "General Studies," page 78), and the Aeronautical Management Technology core, the following additional courses are required in the air way 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	Air ine Administrat on	3
AMT 49	Aviation Management Capstone	3
IMC 346	Management Dynan ics	3
ITM 343	Occupationa Safety and Ergonomics	3
ITM 430	Ethical Issues in Technol gy	3
ITM 452	Industrial Human Res urce Managen ent	3
ITM 456	Introductic n to Organized Labor	3
ITM 480	Organizationa Effectiveness	3
Te hnical e ect ves		15
Total		48

Suggested Course Pattern for Freshmen

First Semester

AMT 101	Introduction to Aeronautical Management Technology	1
AMT 18_	Private Pilot Ground Schoo	3
AMT 220	Av at on Meteorology	3
ENG 101	First Year Composition	3
MAT 170	Precalcu us *MA*	3
Total		13

Second Semester

ENG 102	First Year Composition	3
ETC 100	Languages of Technology *CS*	4
MAT 260	Technical Ca cu us I *MA*	3
PHY 1 1	Genera Physics *SQ**	3
PHY 3	General Physics Laboratory *SQ**	1
General Studies elective		3
Total		17

* Both PHY 111 and 113 must be taken t > 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 fut ire 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 accred ited 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 res idence.

A A S degree transfer	60
Assignable credit	6
B.A S core	15
General Studies	19
Techn ca concentration	20
Tota	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 pre requisite 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	494	ST: Computer Systems Applications	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 Appl ed Statistics *CS*	3
TWC	400	Technical Commun cations *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 orienta tion in management practices that prepares them for pro gressively 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 Associa tion 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 uni versity administrative personnel The Precision Flight Team competes in regional and national flying safety competi tions Women in Aviation is an international organization that is open to all students.

AERONAUTICAL MANAGEMENT TECHNOLOGY (AMT)

AMT Note 1. F ght nstruct on costs are not nc uded n un vers'ty tu tion and fees

AMT 100 Flight Safety I. (1)
fa , spr ng summer
Superv sed pr vate p ot fl ght tra n ng and f ght safety br efings. Con t nuous enro lment requ red unt comp et on of the FAA Private P ot Cert f cate Lecture lab Fee See AMT Note 1 Corequisite· AMT 182 or 220 or ts equ valent

AMT 101 Introduction to Aeronautical Management Technology. (1)
fa and spr ng
Fac tates entry nto Aeronaut ca Management Technology programs Emphas zes *General Catalog* and concentration requirements regis trat on careers and ASU East fac l ties

AMT 182 Private Pilot Ground School. (3)
fa spr ng summer
Ground schoo preparation for Pr vate P ot Cert f cate Aerodynam cs nav gat on performance, and regulat ons Lecture lab Corequ s te AMT 220

AMT 194 Special Topics. (1–4)
not regu arly offered

AMT 200 Flight Safety II. (2)
fa l spr ng summer
Superv sed commerc a nstrument f ght tra n ng and safety br ef ngs Cont nuous enrol ment requ red unt' comp etion of FAA Commerc a P ot Certif cate w th Instrument Rat ng Lecture, ab. Fee. See AMT Note 1. Prerequ s tes AMT 100 Pr vate P ot Cert f cate Pre or coreq u site: AMT 214 or 322.

AMT 201 Air Traffic Contro . (3)
fal
Ground and a r operat ons weather serv ces commun cat ons and rout ng fl ght plans, FR operat ons departures and arrivals and a r port cond t ons and emergenc es Prerequ site AMT 182

AMT 214 Commercial/Instrument Ground School I. (3)
fa l and spr ng
Ground scho ead ng to FAA nstrument P ot Rat ng/Commerc al P ot Certif cate part 1 of 2 10 hours ground tra ner nc uded Lec ture ab Fee Pre- or coreq u s tes. AMT 182 220

AMT 220 Aviation Meteorology. (3)
fa l spr ng summer
Eva uat on, ana ys s, and interpretat on of atmospheric phenomena Low and h gh a titude weather from the p ot s v ewpoint Coreq u s'te: AMT 182

AMT 280 Aerospace Structures, Materials, and Systems. (4)
fa l
Bas c aerodynam cs ncompress b e compress ble a rf ow w nd tunne test ng, w ng theory; ana ys s of a rcraft structures· propert es and app 'cat ons of mater'a s and a rcraft systems Lecture, ab. Fee Pre requ s tes· PHY 111 113

AMT 287 Aircraft Powerplants. (4)
spr ng
Theory and performance ana ys s of gas turb ne and rec'procat ng a r craft e g es Eng ne accessories systems and environmenta con tro . Lecture, ab. Prerequ s te· AMT 280

AMT 300 Flight Safety III. (2)
fa spr ng, summer
Superv sed nstructor f ight tra n ng and safety brief ngs Cont nuous enrol ment requ red unt complet on of FAA Fl ght nstructor Cert ficate w th nstr ment nstructor Rat ng Lecture, ab Fee See AMT Note 1 Prerequ s te AMT 200 Pre- or corequisite· AMT 385.

NOTE· For the Genera Stud es requirement courses, and codes (such as L, SQ C and H see "Genera Stud es " page 78. For graduat on requ rements see "Un vers ty Graduat on Requ reme ts " page 74 For an exp anat on of addit ona omnibus courses offered but not sted n th s cata og, see C ass fcat on of Courses, page 51

AMT 308 Air Transportation. (3)
fa
Study of the h stor ca and nternat ona deve opment of a r transporta t on and ts soc a po t ca and econom c mpact upon g oba nterre lat onsh ps. Prerequ s te jun or stand ng
Genera Stud es. G

AMT 322 Commercial/Instrument Ground School II. (3)
spr ng
Ground schoo ead ng to FAA nstrument P ot Rat ng/Commerc a P ot Cert f cate part 2 of 2 10 hours ground tra ner nc uded Lec ture ab Fee Prerequ s te Pr vate P ot Cert f cate. Pre or corequ s te: AMT 214

AMT 360 Introduction to Helicopter Technology. (3)
not regu arly offered
Introduct on to the work ng funct ns of modern rotary w ng a rcraft rotary w g f ght theory aerodynam cs contro s f ght and power requ rements Prerequ s tes PHY 111 113

AMT 370 Air Freight Operations. (3)
not regu arly offered
A r fre ght operat ons n Nat ona Av at on System ramp operat ons oad ng weight and ba ance, and admin stration of a rs de and ground-s de operat ons Prerequ s te jun or stand ng

AMT 382 Air Navigation (3)
spr ng
Theory and appl cat on of modern advanced navigat on and f ght nstrument systems Introduct on to crew resource management n mu t p ace cockp ts. Lecture ab Prerequ s te AMT 322

AMT 385 Flight Instructor Ground School. (3)
fa l and spr ng
Ground schoo n preparat on for the FAA F ght nstructor Cert f cate Lecture lab Pre or c requ site: AMT 322

AMT 387 Multiengine Pilot Ground School. (1)
fa and spr ng
Ground schoo preparat on for the FAA Mu t eng ne Rat ng Lecture, ab Fee See AMT Note 1. Pre or corequ s te AMT 200 or nstructor approval

AMT 391 Multiengine Instructor Ground School. (2)
not regular y offered
Ground schoo preparat on for the FAA Mu t eng ne Fl ght nstructor Rating Lecture ab See AMT Note 1 Prerequ s tes AMT 300 387, 400

AMT 392 Flight Instructor Instrument Ground School. (2)
fa and spr ng
Gr und schoo preparat on for the FAA Instrument F ght nstructor Rating Lecture ab See AMT Note 1 Prerequ s te AMT 385 Pre or corequ site AMT 200

AMT 395 Multiengine Land, Airplane Flight Instructor Rating. (1)
not reg ar y offered
Norma and emergency f ght operat ons nstruct on techn ques and procedures for ght mu t eng ne and a rp ane CF AME Rating requ red for course comp et on Lecture ab. See AMT Note 1 Prereq u s te AMT 391

AMT 396 Aviation Professional. (1)
fal and spr ng
Career f cus for management and f ght students nclud ng ntern sh ps ré umé wr t ng, nterv ews and emp oyment search n av at on ndustry Prerequ s te jun or stand ng

AMT 400 Flight Safety IV. (1)
fall spr'ng, summer
Mu t eng ne and crew tra n ng and safety br ef ngs Cont nuous enro ment requ red unt comp et on of rat ng and mu t crew tra ning Lec ture ab Fee. See AMT Note 1 Prerequ s te AMT 300 Pre or corequ s te AMT 387

AMT 408 National Aviation Policy. (3)
fa
Exam nat n of av at on and a rspace po c es and po cy process nc ud ng agenc es nvo ved n formu at on, mp ementat on and evalu at on of av at on po cy Prerequ s te AMT 308

AMT 409 Nondestructive Testing and Quality Assurance. (1)
not regu ar y offered
Purpose of nspection and qua ity assurance Theory and app cation of nondestruct ve nspe t on methods App at on of pertinent stan dards spec f cat ons and codes Lecture ab Cross sted as AET 409 Cred t is a owed for n y AET 409 or AMT 409 See AMT Note 1 Prerequ s te AMT 280 or MET 230

AMT 410 Aviation Safety and Human Factors. (3)
fal
Aviat on accident prevent on human factors fe support f re preven-t on, acc dent nvest gation and crash surv vab ty Deve opment and ana ys s of av at on safety programs Prerequ sites jun'or stand ng, comp et on of 1 semester of Genera Stud es L requ rement.

AMT 412 Air Transportation Research. (1)
fa
Survey of pract ca research methodo ogy n use in the a r transporta t on ndustry Top cs nc ude p anning and des gn considerat ons.

AMT 419 Aviation Logistical Management. (3)
spr ng
Survey of FAA requ rements for personne and fac t es Top cs nc ude parts supp y qual ty control, product ab ty pricing prof tab l ty, and admin strati Lecture lab Prerequisite unior stand ng

AMT 442 Aviation Law/Regulations. (3)
fa
Av at on with n context of U S Common Law system Pub c aw admin strat ve ru e mak ng sovere gnty enforcement and case aw ana ys s. Prerequ s te: jun or stand ng

AMT 444 Airport Management and Planning. (3)
spring
Or entat on to adm n strat on and management of modern pub ic air ports nc ud ng overview of p anning fund ng and deve opment of a r port fac it es. Prerequ s te AMT 308

AMT 482 Airline Instrument Procedures. (3)
fa
Advanced nstrument f ght us ng a r ne nstrument procedures and a r ne crew and cockp t resource management Lecture ab Prerequ' s tes AMT 322 382

AMT 484 Aeronautical Internship. (1–12)
fa spr ng summer
Work exper ence ass gnment w th aerospace ndustry commensurate w th student s program Spec a project gu dance by ndustry with un versity superv s on. Prerequ s tes adv sor approval junior stand ng

AMT 489 Airline Administration. (3)
spr ng
Adm n strat ve organ zat ons econom cs of airl ne adm n strat on operat ona structure and re at onsh p w th federal government agen c es Prerequ sites AMT 308 nstructor approva

AMT 491 Aviation Management Capstone. (3)
spring
ntegrat on and verv ew of management too s current bus ness prob lems and topics re ated to av at on ndustry Group project with ndus try and government and bus ness partners Prerequ site sen or stand ng

AMT 494 Special Topics. (1–4)
not regular y offered

AMT 496 Airline Aircraft Systems Capstone. (3)
spr ng
Commerc a a r ne a rcraft systems and f ight procedures Inc udes theoret ca educat on for large commerc a passenger a rcraft Lec ture, lab Prerequ site sen or stand ng

AMT 498 Pro-Seminar. (1 7)
not regu ar y offered

AMT 499 Individualized Instruction. (1–3)
not regu ar y offered

AMT 521 Air Transportation Regulation. (3)
not regu ar y offered
Rev'ews evo ut onary h story of government regu at ons Exp ores a ternat ves for econom c safety soc al, and adm n strat ve regulatory reform n a r transportat on Prerequ s te AMT 444 or 489 or ts equ v alent

AMT 523 Aviation Systems Management. (3)
not regular y offered
System theory app ed to ntermoda transportation networks. Survey of a r and ground transportat on infrastructure nst tut onal frame works and ntermed ar es promoting connect ons between modes Prereq s te AMT 444 or 489 or ts equ valent

AMT 525 Airport Planning and Design. (3)
not regu arly offered
Students complete var ous phases of a rport master plann ng process Prov des gu dance for og ca a d t me y deve opment f a rports. Project work groups ass gned. Prerequisite· AMT 444 or 489 (r ts equ valent)

AMT 527 Airline Management Strategies. (3)
not regu ar y offered
S nce deregu at n a r ines have undergone profound changes through mergers conso dat on, and acqu s t on. n depth look at a r ine management strateg es for the 21st century Prerequ s te· AMT 444 or 489 or ts equ valent

AMT 528 International Aviation. (3)
not regu ar y offered
Ma or ssues of nternat onal av at on, h storical review of inst tut onal framework B atera route agreements freedom versus sovere gnty current ega and po it ca arrangements Prerequ s te AMT 444 or 489 or ts equ va ent

AMT 529 Fixed-Base Operations Management. (3)
not regu arly offered
Examinat on of FBO ro e n the nat onal av at on system Organ zat on of f ght ne operat ons, a'rcraft maintenance and adm n strat on for mult ple a rcraft types. Prerequ s te AMT 444 or 489 (or its equ va ent

AMT 541 Aviation Physiology. (3)
not regular y offered
Survey of human phys ology and human performance pr ncip es re ated to modern a rcraft and a rcraft systems operat ng n mu tiple environments Prerequ site AMT 410 (or its equ va ent)

AMT 543 Ergonomics in High-Technology Environments. (3)
not regu arly offered
Exam nation of ergonomic des gn pr nc p es regarding man-mach ne interface requ rements of h gh techno ogy workstat ons Emphas s on computer workstat'on des gn ssues Prerequisite AMT 410 (or ts equ va ent)

AMT 545 Human Factors in Aviation. (3)
not regular y offered
Overv ew of human ro e n aviat on. Issues, prob ems of unsafe acts and att tudes n human behav or Human eng neer ng capab it es and im tat ons Prerequ s te: AMT 410 (or its equ va ent).

AMT 546 Crew Resource Management/Line-Oriented Flight Training. (3)
not regular y offered
Eva uation of in-depth, mu t crew coord nat on ssues for commerc a av at on p ots Stresses mportance of cr tical th nk ng, dec s on mak ng, ntegrated resource uti zation Prerequis te· AMT 410 (or 'ts equ'va ent

AMT 547 Modern Human Factors Design Issues. (3)
not regu ar y offered
Research and d scuss on of current human factors ssues State of the art ana yses of nformat on regarding rap d y evo v ng des gns and app ication ons Prerequ s te· AMT 410 (or ts equiva ent

AMT 549 Human Factors Research. (3)
not regular y ffered
Aviat on human factors research pr nc p es app ed and tested n oper at ona settings Group projects ass gned n conjunct on with industry partners Prerequ site: AMT 410 or its equ va ent)

AMT 580 Practicum. (1–12)
not regular y offered

AMT 584 Internship. (1 12)
not regular y offered

AMT 590 Reading and Conference. (1–12)
not regular y offered

AMT 591 Seminar. (1 12)
not regu arly offered

AMT 592 Research. (1–12)
not regu arly offered

AMT 593 Applied Project. (1–12)
not regu ar y offered

AMT 595 Continuing Registration. (1)
not regular y offered

AMT 598 Special Topics. (1–4)
not regularly offered

AMT 599 Thesis. (1 12)
not regu ar y offered

Department of Electronics and Computer Engineering Technology

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PROFESSORS
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ASSISTANT PROFESSORS
LIPARI, PETERSON

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

NOTE: For the General Studies requirement courses, and codes (such as L, SQ, C and H) see "General Studies" page 78 For graduation requirements see "University Graduation Requirements" page 74. For an explanation of additional common business courses offered but not listed in this catalog see "Classification of Courses" page 51.

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 78) as well as the math science requirement of TAC of ABET. Note that all three General Studies awareness areas are required. Consult your 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	150 Digital Systems I *CS*	4
CET	256 C Programming for Engineering Technology	3
CET	350 Digital Systems II	4
CET	354 Microcomputer Architecture and Programming	4
EET	208 Electric Circuit Analysis I	4
EET	311 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	3
UET	331 Electronic Materials	3
UET	415 Electronic Manufacturing Engineering Principles	3
Total		45

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

Electronics Engineering Technology Concentrations

Electronic Systems

CET	483 UNIX with C Applications	3
EET	406 Control System Technology	4
EET	430 Instrumentation Systems	4
EET	460 Power Electronics	4
Approved technical electives		8
Total		23

Microelectronics

CHM	116 General Chemistry *SQ*	4
UET	416 Monolithic Integrated Circuit Devices	3
UET	417 Monolithic Integrated Circuit Laboratory	2
UET	418 Hybrid Integrated Circuit Technology	4
UET	421 Applied Device Physics	3
UET	432 Semiconductor Packaging and Heat Transfer	3
Approved technical electives		4
Total		23

Telecommunications

CE	473 Digital Data Communications	4
EET	304 Microwave Technology	4
EET	401 Digital Filters and Applications	3
EET	470 Communication Circuits	4
Approved technical electives		8
Total		23

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*	3
PHY	113 General Physics Laboratory *SQ*	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
Elective 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 a 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. The 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 230 Applied Data Structures. 3
CE 256 C Programming for Engineering Technology 3
EET 208 Electric Circuit Analysis I 4
E C 10 Languages of Technology *CS* 4

Core total. 21

Major

CET 350 Digital Systems I 4
CET 354 Microcomputer Architecture and Programming . . . 4
CET 456 Assembly Language Applications 3
CET 483 UNIX with C Applications. 3
CET 486 Hardware Description Languages: VHDL 3
CET 494 S Computer Project 3
EET 396 Professional Orientation . . . . . .

Total 21

Computer Hardware Technology Concentration

CET 452 Digital Logic Applications 4
CET 454 Microcontrollers 3
CET 457 Microcomputer Systems Interfacing 4
CET 473 Digital/Data Communications. 4
CHM 113 General Chemistry *SQ* 4
EET 301 Electric Circuit Analysis II 4
EET 330 Electronic Circuits I 4
EET 372 Communication Systems 4
UET 331 Electronic Materials. 3
Technical electives 5

Total 39

Embedded Systems Technology Concentration

CET 200 Object Oriented Software Development I 3
CET 300 Object Oriented Software Development II. 3
CET 386 Operating Systems Principles 3
CET 452 Digital Logic Applications. 4
CET 457 Microcomputer Systems Interfacing. 4
CE 473 Digital/Data Communications 4
CET 488 UNIX Systems Administration 3
CHM 113 General Chemistry *SQ* 4
EET 301 Electric Circuit Analysis II 4
Technical electives. 7

Total 39

Software Technology Concentration

CET 200 Object Oriented Software Development II. . . 3
CET 236 Introduction to Visual BASIC 3
CET 300 Object Oriented Software Development III . 3
CET 326 Modern Programming Languages 3
CET 386 Operating Systems Principles 3
CET 400 Software Engineering Technology 3
CET 425 Server Software Programming 3
CET 488 UNIX Systems Administration 3
CET 489 Network Programming 3
Technical electives 12

Total 39

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

First Year

First Semester

CET 100 Object Oriented Software Development I. 3
ENG 101 First Year Composition. 3
MAT 170 Precalculus *MA* 3
PHY 111 General Physics *SQ* 3

NOTE: For the General Studies requirement courses and codes such as L, SQ, C, and H, see "General Studies" page 78. For graduation requirements see "University Graduation Requirements" page 74. For an explanation of additional nonbusiness courses offered but not listed in this catalog, see "Classification of Courses" page 51.

PHY	113 General Physics Lab *SQ*	1
Total		3

Second Semester

CET	200 Object Oriented Software Development II	3
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 Lab *SQ*[2]	1
Total		17

Second Year

First Semester

CET	150 Digital Systems *CS*	4
CET	230 Applied Data Structures	3
CET	256 C Programming for Engineering Technology	3
CHM	113 General Chemistry *SQ*	4
MAT	261 Technical Calculus II	3
Total		17

Second Semester

CET	300 Object Oriented Software Development III	3
CET	350 Digital Systems II	4
ECN	111 Macroeconomic Principles *SB*	3
EET	208 Electric Circuit Analysis I	4
MAT	243 Discrete Mathematical Structures or MAT 262 Technical Calculus III *MA* 3	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 hours in residence.

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

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.

CET	300 Object Oriented Software Development III	3
EET	494 ST Data Analysis	3
GIT	352 Technical Presentations and Visual Literacy	3
IMC	346 Management Dynamics	3
TWC	400 Technical Communication I	3
Total		15

Technical Concentrations

Computer Systems Administration. This concentration is designed to broaden and provide more in depth knowledge in computer networks. Graduates from this concentration will be prepared to specify, install, maintain, and administer various computer 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. This concentration also prepares graduates for computer systems and network administration careers.

COMPUTER ENGINEERING TECHNOLOGY (CET)

CET 100 C/C++ Programming. (3)
fal and spr ng
App ied and pract ca problem so v ng us ng the C programm ng an guage Introduction to C++. Prerequ s te ETC 100

CET 150 Digital Systems I. (4)
fall and spr ng
Number systems Boo ea a gebra comb nat ona og c K-maps f p f ops sequent a c rcu ts state machines, and m n m zation tech n ques.
Genera Stud es CS

CET 191 First-Year Seminar. (1–3)
not regularly offered

CET 200 JAVA Programming. (3)
fall
Concepts of JAVA programm ng anguage address ng advanced top cs such as JAVA arch ve f es, threads nheritance, dialog boxes, and JAVA beans Prerequ s te CET 100.

CET 230 Applied Data Structures. (3)
fa
ntroduct on to data structures str ngs, stacks, queues b nary trees recurs on search ng and sort ng Prerequ s te CET 100

CET 236 Introduction to Visual BASIC. (3)
fal
Introduction to BAS C and programm ng n the V sua BAS C env r n ment Prereq s te CET 100

CET 250 Computer and Network Technology. (3)
spr ng
Computer technology as re ated to d g ta communicat ons and net work ng Network operat ng systems, protocols and rout ng techn ogy. Prerequ s te CET 100 150

CET 256 C Programming for Eng neering Technology. (3)
fa l spring summer
App ed and pract cal prob em so v ng us ng the C programm ng an- guage Prerequ s te: ETC 100

CET 294 Special Topics. (1–4)
not regular y offered

CET 300 Object-Oriented Software Development. (3)
fall
Increases sk ls n OO concepts and present C++. Covers JAVA con cepts of threads er a zat on and JAVA beans C++ anguage c n cepts Prerequ s tes: CET 20 256

CET 326 Modern Programming Languages. (3)
fa l
Concepts and semant ca and syntact ca construct on of modern pro gramm ng languages Prerequ s te CET 200

CET 350 Digital Systems II. (4)
fa l
Ana ys s and design of synchronou and asynchr ous state mach nes ntroduct on to VHDL Lecture, ab Prerequis te CET 150

CET 354 Microcomputer Architecture and Programming. (4)
fa and spr ng
M crocomputer arch tecture assemb y anguage pr gramm ng O cons derat'o s except on and nterrupt hand ng. ntroduct on to nter fac ng Prerequ s te CET 150

CET 386 Operating Systems Principles. (3)
spr ng
Fundamentals of operat ng systems, process management schedu ng and synchron zat on techn ques memory and f e management, protect on and security issues Prerequ s te CET 256

CET 400 Software Engineering Technology. (3)
spr ng
Software l fe cycle mode s project management team deve opment environments software spec f cat on des gn mplementat on tech n ques and too s val dat on and ma ntenance user documentation Prerequis'te· sen or stand ng n Techno gy

CET 401 Digital Signal Processing for Multimedia. (3)
fa
Appl cat on f DSP techn ques to mu t med a. D g ta f ter analys s a d des gn. T me and frequency techn ques Computer app cat ons Cross sted as EET 401. Cred t s a owed f r on y CET 401 or EET 401 Prerequ s tes: EET 301 MAT 262

CET 425 Server Software Programming. (3)
once a year
Des gn and mp ementat on f software servers, threaded socket serv ers servers for d str buted Web based app cations; security for the Web Prerequ s te CET 3 0 or nstructor approva

CET 426 Software Tools for the Semiconductor Industry. (3)
spr ng
ntroduct on to software too s common y used n the sem conductor ndustry, such as SUPREM V PSPICE VIEWLOG C and CED Cross ted as UET 426 Cred t is a owed for on y CET 426 or UET 426 Prerequ s te UET 331

CET 433 Database Technology. (3)
fa l
Introduct on to database techno ogies and DBMS, data mode s, and languages Prerequ s tes: CET 230 300

CET 436 Applications of Visual BASIC. (3)
fa
Appl cat ons of V sua BASIC to graph cs graph cal user nterfaces error hand ng, f e process ng OO pr gramm ng, DBMS network ng and mu t med a Prerequ s te CET 236

CET 450 Advanced Internetworking Technologies. (3)
spr ng
Effects and benef ts, des gn and funct ons of nternetwork ng proto co s Prepares students f r the C sco cert f cat on exam nat on. Pre- requ s te CET 250

CET 452 Digital Logic Applications. (4)
spr ng
De gn of sequent al mach nes us ng system des gn techn ques and comp ex MSI LS dev ce w th ab. Prerequ s te CET 350

CET 454 Microcontrollers. (3)
spr ng
M crocontro er nput/output ports and advanced features M crocon tro ers as an embedded system and the r nterfac ng considerat ons. Prerequ s tes CET 350, 354

CET 456 Assembly Language Applications. (3)
fa
Programm ng us ng BIOS and DOS rout nes H gh eve anguage nterfacing D sk operat ons TSR rout nes and dev ce dr vers Prereq u s te CET 354

CET 457 Microcomputer Systems Interfacing. (4)
spr ng
Appl cat ons of m cr computer hardware and software Spec al pur pose contro ers nterface des gn Lecture, lab Prerequ s tes CET 354; CSE 183 EET 310.

CET 458 Digital Computer Networks. (3)
once a year
Network techno ogy topo og es protoco s contro techn ques, re ab l ty and secur ty Prerequ s te CET 354.

CET 473 Digital/Data Communications. (4)
fa
S gna s d stort on no se and error detect on correct on Transm ss on and ystems des gn. Interface techn ques and standards Lecture ab Prerequ s tes· CET 354 EET 372

CET 483 UNIX with C Applications. (3)
fa
Generate user prof c ency n the use of the UN X operat ng system ts shel s env ronment and 4th generation anguage and tools Prerequ - s te sen r stand ng n the ECET department or ts equiva ent

CET 484 Internship. (1–12)
not regu ar y offered

NOTE: For the Genera Stud es requ rement, courses and codes (such as L, SQ C, and H), see 'Genera Stud es " page 78 For graduat on requ rements see Un versity Graduation Requ rements " page 74. For an exp anation of add t onal omn bus courses offered but not sted n th s cata og see C ass f cat on of Courses " page 51.

CET 485 Digital Testing Techniques I (3)
once a yea
Hardware software aspects of d g ta test ng te n gy systems board a d g test ng a d equ p ent Lecture ab Cr ss sted as UET 485 Cred t s a wed for o y CET 485 or UET 485. Prerequ s tes CET 350 EET 310

CET 486 Hardware Description Languages: VHDL. (3)
spr ng
ntr duct n to hardware descr pt n anguages s ng VHDL Tech ques for mode ng and s mu at ng sma d g ta syste s us ng a VHDL s mu at r Prerequ s tes CET 35 483

CET 487 Hardware Description Languages: VERILOG. (3)
fa
ntroduct on to hardware descr pt a guages d g ta ode ng and s mu at on techn ques us ng the VER LOG HDL Prerequ s te CET 350, 354

CET 488 UNIX Systems Administration. (3)
fa
Generate user pr f c ency n adm n strat on of UN X ope at ng sy tem ts processe system ca s ker e f e struct re and terprocess commun cat o too s Prerequ s te CET 483 or ts equ va ent C or C++ ang age

CET 489 Network Programming Applications (3)
fa
Ge erate user p of c ency n wr t g programs and scr pts to contro and adm n ster a UN X operat ng system network Prerequ s te CET 473 and 488 or the e u va ent C or C++ anguage

CET 490 Reading and Conference. (1 12)
not regu arly offered

CET 492 Honors Directed Study. (1–6)
not regu ar y offered

CET 493 Honors Thes's (1–6)
not regu ar y ffered

CET 494 Special Topics. (1–4)
not regu ar y offered
Poss b e top cs
a Computer Pr ject

CET 498 Pro Seminar. (1 7)
not regu ar y offered

CET 499 Indiv dualized Instruction (1 3)
not regu ar y offe ed

CET 501 D gital Signal Processing Applications (3)
fa
App cat n of DSP techn ques to the de gn and ana ys s f d g ta f l ters So ut on of f ter ng prob ems us ng c mputer te hn ques Cr s sted as EET 50 Cred t a lowed for n y CET 501 or EET 5 1 P e requ s te EET 401 or nstructor appr va

CET 520 Computer Arch tecture (3)
fa
Bas cs of comp ter arch tecture RTN R SC C S con epts com puter ar thmet c ALUs mem ry systems O Prerequ s te CET 354.

CET 533 Database Management Systems. (3)
fa
System aspects of e at ona databa es e at ona database des gn, ndex and ac e s structures mp ementat on and performa e eva ua t on query process ng and opt m zat on Prerequ s te CET 433

CET 546 Computer Vision. (3)
spr ng
Image segmentat on and enhancement Object recogn t on and mod- e ng. M rpho og ca operat on f r ob ect rec gn t on and measure ment Prereq s te CET 300

CET 552 Digital Systems Design. (3)
spr ng
D g ta system des g techn ques and app cat ons Prerequ s te CET 452 or nstructor approva

CET 554 Distributed Comput ng. (3)
spr ng
Top cs n d str buted systems nc ud ng c mmu cat ons d str buted operat ng systems fau t to eran e, a d performance sues Pre equ s tes CET 354 386

CET 556 Windows Programming. (3)
fa
Program ng techn q es n t e MS W ndows and X W ndow env ron ments P erequ s te CET 256 or ts eq va ent

CET 557 M crocomputers and Applications. (3)
fa
App cat ons of sma computer systems m n and m cr computer hardware a d software Prerequ s tes CET 354 SE 100 or 183) EET 310

CET 566 Pr nciples and Practices of Operating Systems. (3)
sp ng
Pr n p es and p a t ces f operat ng ystems v rtua mem ry sys tems O dev es and systems f e systems and rgan zat on and ther t p Prerequ s te CET 386

CET 576 Embedded Real Time Programming. (3)
fa
p cs n rea t me embedd d operat ng systems such as synchr n za- t commun cat ons f e system and memory shar ng Prerequ s tes: CET 300 386

CET 580 Practicum. (1 12)
not regu ar y ffe ed

CET 583 Network Programming. (3)
fa
Ge erate user p of c ency n writ ng C program and scr pts to contro and adm n ster a UN X operat ng sy tem network Prerequ s tes CET 473 and 488 o the r equ va ents C r C++ anguage

CET 584 Internsh p (1–12)
not regu ar y offered

CET 585 Dig'tal Testing Techniques II. (3)
fa
Test ng te h gy as app ed to d g ta systems boards and chips Lecture, ab Prerequ s te· CET 354

CET 586 Digita Modeling Techniques. (3)
sp ng
D g ta system mode ng and s mu at on us ng hardware descript n anguages Prerequ s tes CET 35 354

CET 590 Read ng and Conference. (1 12)
not egu ar y offered

CET 591 Seminar. (1 12)
not regu ar y offered

CET 592 Research. (1 12)
n t regu ar y offered

CET 593 App ied Project. (1 12)
not regu ar y offered

CET 594 Conference and Workshop. (1 12)
not regu a y offered

CET 595 Continu ng Reg stration. (1)
not regu ar y ffered

CET 598 Special Topics. (1–4)
n t regu ar y offered

CET 599 Thesis. (1 12)
not regu ar y ffered

ELECTRONICS ENGINEERING TECHNOLOGY (EET)

EET 191 First-Year Seminar. (1 3)
not regu a y offered

EET 208 Electric Circuit Analysis I. (4)
fa and spr ng
E ectr ca mode s AC DC steady state ana ys s of f rst and second order systems C r t theo ems Three phase c rcu ts Lecture ab. Pre or corequ s te MAT 261

EET 294 Specia Topics. (1–4)
not regu ar y offered

EET 301 Electric Circuit Analysis II. (4)
fa and spr ng
Ana ys s of c nt nuous t me s gna s and near systems f us'ng Lap ace and Four er response of c rcu ts Lecture ab Prerequ s te EET 208 Pre r corequ s te MAT 262

EET 304 Transm ssion Lines in Computer Engineering. (3)
spr ng
Transm ss n ne cons derat ons f r computer c rcu ts Ref ect on trans ents cr s ta k and ot er top cs H gh speed c rcu t cons der- at ns Prereq s te EE 301

EET 310 Electronic C rcuits I (4)
fa and spr ng
Mu t stage am f er ana ys s and des gn us ng mode s and computer s m at n Lectu e ab Prerequ s te EET 208.

EET 372 Communication Systems. (4)
fa l and spring
Systems ana ys s and des g of AM FM PCM and SSB c mmun ca t on systems No se and d stort on performance of commun cat on sys tems. Lecture ab Pre- or coreqU s tes EET 301, 310

EET 394 Special Topics. (1–4)
not regu ar y offered

EET 396 Professional Orientation. (1)
fa and spr ng
Techn ca profess ona ec nom c and eth ca aspects of e ectron cs computer eng neering techno ogy pract ce and ndustr a organ zat on Lecture projects Prereq s te jun or stand ng.

EET 401 Digital Signal Processing for Multimedia. (3)
fall
Appl cat on of DSP techn ques to mu t med a. D g ta f ter ana ys s and des gn T me and frequency techn ques Computer app cat ons. *Cross 'sted as CET 401 Cred t s a owed for on y CET 401 or EET* 401 Prerequis'tes EET 301 MAT 262

EET 406 Control System Technology. (4)
spr ng
Contro system components ana ys s of feedback contr systems stab l ty performance, and app cat on. Lecture ab computer s mu a t ons PrereqU sites EET 301· MAT 262

EET 407 Energy Conversion and Applications. (4)
fal
E ectr c ty magnet sm mechan cs heat and un ts and three phase c'rcu ts E ectr ca mach nes transformers generat on transm ss on and d str but on of e ectr cal energy Lecture ab PrereqU s te. EET 208

EET 410 Electronic Circuits II. (3)
fal and spr ng
Ana ys s and desig of OP amps p wer amp f ers and d g ta g'c fam l es Feedback des'gn us ng frequency response Computer ana ys s and des'gn Prerequ s tes: EET 301 310

EET 422 Electronic Switching Circuits. (4)
once a year
Analys s and des gn of e ectron c c rcu ts operat ng n a switch ng mode Waveshap ng t m ng, and og c Computer s mu at on Lecture ab. Prerequ s tes CET 350, EET 301 310.

EET 430 Instrumentation Systems (4)
fa
Measurement pr nc p es and nstrumentat on te hn que S gna and error ana ys s Lecture ab PrereqU tes EET 301, 310

EET 460 Power Electronics. (4)
spr ng
Ana ys s of c rcu ts for contr and convers on of e ectr ca power and energy Lecture, ab Prerequ s tes EET 301 310 407

EET 470 Communication Circuits. (4)
spring
Analys s and des gn f pass ve and act ve c mmun cat on c cu ts Coupl ng networks, f ters, and impedance match ng Modu at on and demodu at n techn ques. Computer so ut ons Lecture ab PrerequI s tes EET 372 MAT 262

EET 478 Fiber Optic Commun cations. (3)
spr'ng
F ber opt c commun at on systems ana ys s and des gn St dy of f ber optic wavegu des ght sources ght detectors no sy ght s gna detect on Prereq s tes: *EET 372 MAT 262*

EET 482 Industrial Practice: Internship/Co-op. (1–4)
fa l spr ng summer
Spec a y ass gned or approved act v t es n electr n c dust es or nst tut ons Report requ red May be repeated for up to a max mum f 10 cred ts PrereqU s tes E ectron cs Eng neer g Techno ogy major, jun or or sen o stand ng

EET 484 Internship. (1–12)
not regu ar y offered

EET 490 Electronics Project. (1–4)
fa , spr ng, summer
nd vidual or sma group projects n app ed e ectron cs w th emphas s on aboratory pract ce or hardware o ut ons t pract ca prob ems PrereqU s te nstructor approva

EET 492 Honors D'rected Study. (1–6)
not regu ar y offered

EET 493 Honors Thesis. (1–6)
not regu ar y offered

EET 494 Specia Topics. (1–4)
fa and spr ng
Poss b e t p s
a Data Ana ys s 3

EET 498 Pro-Seminar. (1–7)
not regu ar y offered

EET 499 Ind vidualized Instruction. (1–3)
not regu ar y offered

EET 500 Research/Writ'ng. (2)
fa and spr ng
Des gned to he p master s students deve op the r projects and write the f rst three chapters of the r projects Lecture sem nar PrereqU s te nstructor approva

EET 501 Digital Signa Processing Applicat ons. (3)
fa
App at on of DSP techn ques to the des gn and ana ys s of d g ta f ters So ut on of f ter ng prob ems us ng computer techn ques Cross- sted as CET 501. Cred t s al owed for only CET 501 or EET 501 Pre- requ s te EET 401 or nstructor approva

EET 506 System Dynamics and Control. (3)
spr ng
T me frequency and transform doma n ana ysis of phys cal systems. Transfer fu ct on ana ys s of feedback contro systems performance and stab ty Compensat on Prerequ s te. EET 301 or MAT 262

EET 508 Digital Real-Time Control. (3)
o ce a year
Samp e data c ntro techn q es and app cat ons to process contro Prerequ s tes CET 354 EET 406

EET 510 Linear Integrated Circu ts and Appl'cations. (3)
fa
Ana y de gn and app cat n f near ntegrated c rcu ts and sys tems Prerequ s tes CE 350; EET 301 310

EET 522 Digita Integrated Circuits and Applicat'ons (3)
spr ng
Ana ys s de gn, and app cati f teg ated c rcuits and systems PrereqU s tes CET 350, EET 301 310

EET 530 Electron c Test Systems and Appl cations. (3)
fa
Ana ys s des g and app cat n f e ectron c test equ pment test sy tems spec f cat ons and documentati n Prerequ s tes CET 354 EET 301 310

EET 560 Industr al Electronics and Applications. (3)
spr ng
Ana y s des gn and app cat o of spec a e ectron c dev ce and sy tems to ndu tr a cont power, commun cat ons and processes Prerequ tes CET 350 EET 301 310 407

EET 574 Microwave Amplifier Circuits Design. (3)
fa
Ana ys s and des gn of m crowave amp f e c rcu ts us ng s parameter theory and c mputer a ded des gn Prerequ sites EET 304, 470.

EET 578 D gital Filter Hardware Design. (3)
spr ng
Ha dware de g f F R and I R f ters nc ud g adapt ve f ters based on DSP ch ps Deve op new app cat ons us ng DSP microprocessor systems Prerequ s tes: CET 354 EET 401

EET 579 Dig tal Image Communication (3)
spr ng
mage capture transform compress on storage, and transm ss on C mputer env ronment s ftware and hardware s prov ded to empha s ze t e pract ca aspect Prerequ s te EET 401 or nstructor approva

EET 580 Practicum. (1–12)
not regu ar y offered

EET 584 Internsh p. (1–12)
not regu ar y offered

EET 590 Read ng and Conference. (1 12)
not regu a y offe ed

NOTE: For the Genera Stud es equ rement courses and codes such as L SQ C and H , see General Stud es page 78 For graduat on requ ements see "Un vers ty Graduat on Requ ements " page 74 F r an exp anat on of add t ona mn bus courses offered but not isted n th s cata og see C ass f cat on of Courses " page 51

EET 591 Graduate Seminar. (1 12)
not regularly offered

EET 592 Research. (1–12)
not regularly offered

EET 593 Applied Project. (1 12)
not regularly offered

EET 594 Conference and Workshop. (1 12)
not regularly offered

EET 595 Continuing Registration. (1)
not regularly offered

EET 598 Special Topics. (1–4)
not regularly offered

EET 599 Thesis. (1 12)
not regularly offered

MICROELECTRONICS ENGINEERING TECHNOLOGY (UET)

UET 191 First-Year Seminar. (1–3)
not regularly offered

UET 194 Special Topics. (1–4)
not regularly offered

UET 294 Special Topics (1–4)
not regularly offered

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

UET 411 Applied Vacuum Technology. (3)
spring
Fundamentals applications and practical aspects of vacuum systems and their uses in semiconductor fabrication Prerequisite UET 331

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

UET 416 Monolithic Integrated Circuit Devices. (3)
fa
Physics and electronics of bipolar and MOS devices used in integrated circuits Prerequisite UET 331 Corequisite UET 417

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

UET 418 Hybrid Integrated Circuit Technology. (4)
spring
Layout fabrication design and manufacture of thin and thick film hybrid circuits Lecture lab Prerequisites EET 310 UET 331

UET 421 Applied Device Physics. (3)
fa
Band structures of solids physics of current carriers in solids pn junctions MOS and bipolar transistors Prerequisite senior standing in the department

UET 424 Integrated Circuit Mask-Making Technology. (3)
fa
Fundamentals, applications, and techniques for the fabrication of integrated circuit masks Prerequisite UET 331

UET 426 Software Tools for the Semiconductor Industry. (3)
spring
Introduction to software tools commonly used in the semiconductor industry such as SUPREM V PSPICE V EWLOGIC and CED Cross listed as CET 426 Credit is allowed for only CET 426 or UET 426 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 Integrated Circuit Testing. (3)
spring
Principles techniques and strategies employed at wafer level and final product testing both destructive and nondestructive Prerequisite UET 416

UET 484 Internship. (1–12)
not regularly offered

UET 485 Digital Testing Techniques I. (3)
once a year
Hardware software aspects of digital testing technology, systems board and logic testing and equipment. Lecture, lab. Cross listed as CET 485 Credit is allowed for only CET 485 or UET 485. Prerequisites. CET 350 EET 310

UET 492 Honors Directed Study. (1–6)
not regularly offered

UET 493 Honors Thesis. (1–6)
not regularly offered

UET 494 Special Topics. (1–4)
not regularly offered

UET 498 Pro-Seminar. (1–7)
not regularly offered

UET 499 Individualized Instruction. (1 3)
not regularly offered

UET 513 VLSI Circuit Design and Layout. (3)
fa
Techniques and practice for the design and layout of very large-scale integrated (VLSI) circuits Emphasis on system on chip using tools for computer aided design layout Seminar Prerequisite UET 416

UET 516 Semiconductor Process Simulation and Integration. (3)
spring
Modern IC processes and process integration design of modern IC processes using SUPREM Lecture lab Prerequisite UET 416

UET 518 Hybrid IC Technology and Applications. (3)
spring
Theory processing, fabrication, and manufacturing of hybrid microelectronics devices and products Applications Prerequisite UET 331 *or its equivalent) or instructor approval*

UET 521 Device Physics. (3)
fa
Band structure of solids electron hole pairs, mobility ifetime, fermi level p junctions, diodes and bipolar and MOS transistors Prerequisite graduate standing in the department

UET 532 IC Packaging. (3)
spring
IC packaging theory and techniques assembly techniques, material issues, thermal management electrical performance and reliability Lecture lab Prerequisites ETC 340 and UET 331 or their equivalents

UET 580 Practicum. (1 12)
not regularly offered

UET 584 Internship. (1 12)
not regularly offered

UET 590 Reading and Conference. (1–4)
not regularly offered

UET 591 Seminar. (1–12)
not regularly offered

UET 592 Research. (1–12)
not regularly offered

UET 593 Applied Project. (1–12)
not regularly offered

UET 594 Conference and Workshop. (1 12)
not regularly offered

UET 595 Continuing Registration. (1)
not regularly offered

UET 598 Special Topics. (1–4)
not regularly offered

UET 599 Thesis. (1–12)
not regularly offered

Department of Information and Management Technology

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PROFESSORS
DUFF, H LD, SADOWSKI SCHILDGEN

ASSOCIATE PROFESSORS
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ASSISTANT PROFESSOR
KIME

SENIOR LECTURER
W LSON

LECTURERS
DOL N HARR S, 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.

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 technology, 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 management, 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 your 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

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

NOTE: For the General Studies requirement courses, and codes such as L SQ C and H see "General Studies" page 78 For graduation requirements see "University Graduation Requirements," page 74 For an explanation of additional omnibus courses offered but not listed in this catalog see "Classification of Courses, page 51

Principles of Hazardous Materials and Waste Management, the remainder of the courses may be taken in any sequence

Industrial Technology Management Concentration. The industrial technology management concentrat on prepares students for supervisory and idm nistrative positi ons in industry, manufacturing, and publ c service orzanizatic ns Course work includes accounting, data ana ysis, economics, effective decision m aking, finance, internat onal busit ess, legal and ethical studies, n arketing operati ons mana e ment, and safety. Fn ph sis is placed on health and safety withit the workplace.

The industrial technology n inagen ent program n ay be articulated w ith a broad range of comt unity co lege techni cal courses Commun ty college spec il zations in areas such as aeronautics, construct on electronics, fire cience, police science, graphic information te hnc l _v, haza dous materials and waste n anagement, computer graphics safety and health human resource management, prod ction mar agement, and n anufacturing may form i technica specialty area w ithin the indust ial technology i anagemei t option. Consultation with an advisor is required tc coordinate the course selection for transfer to th s option.

Graphic Information Technology Concentration. The graphic information techno logy concentrat on prepares stu dents for technical and mana_ement pc sitions in the div erse graphic communication and information technology nd is tries digital printing and publishing technical d gital media production; n anagement of graph c informati on assets, quality assurance of graphic products, plannit g and evalua tion of print, Internet, n ultimedia, and computer based comn unications. This is an intensive 12) sen ester hour graphic technology program of study emphas zing theory and hands on laboratory pract ce Students develop skil s to plan and execute graphic s lut ons using visualization and sketching, engineering graphic standards, techn cal docu ment design, higher level graphic programming languages, computer draw ing and illustration, multimedia and three dimensional modeling, project mar agement, qual ty assur ance, and e commerce practices Graduates are able to present technical solutions using graphics in print and Inter net publ cations, eng neerin_ documents, media r ch pre sentations, interact ve training and instruction, models, and animations Typical career opportunities include zraph ic operations management, sales and marketing informatic n technology support in graphics related industries, graphic systems analysis, digital publishing both print and nline , and computer graphics content planning and creation

APPLIED SCIENCE—B.A.S.

The Bachelor of Applied Science degree is a 'c ipstot e' degree for the Associate of Applied Science de ree. The B.A.S. degree exposes students to advanced concepts and diverse critical thinking skills that prepare then for future career opportunities and professional advancement

Admission

Admission to the B.A.S degree program is restr cted to students holding an A A.S. degree fron a regionally accred ited U S postsecc ndary edu cational nstitution A GPA of 2.00 or higher is required for all resident ppl cants and a 2.50 for nonres dent appl cants

Degree Requirements

The B A S degree in the Co lege of Technology and Applied Sciences consists of 60 semester hours of upper division 3 00 evel and above) cc urses, with 30 hours in res dence

A A S degr transfer	60
Assignabl credit	6
B A S e	15
Genera Studies	19
Te hn ca ncentrat on	20
tal	120

General Studies Curriculum

The B.A.S. curriet im builds n the general ed ication content of th e A A.S. degree Additio al General Studies (L, CS and awareness are is are met with courses in the core or concentration Genera Studies co irses focus on contextual learning.

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

Assignable Credit

Assignable credit allows space in the curriculum for pre requisite ourses needed to succeed in the program The courses are deter nined by the student and the advisor.

B.A.S. Core

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

GIT 31) C n p ter Graphics Prozra m ng C++) *CS*	3
r GIT 4)4 ST· Computer Svsten s Applications	3
IMC 346 Management Dynam cs	3
ITM 452 Industrial Human Res urce Management	3
cr IMC 47 Project Management	3)
MET 4 1 Quality Assurance	3
cr STP 420 Introductory Appl ed Stat stics *CS*	3
TWC 4)(Techni a Co m unicati ns *L*	3
T ta	15

Technical Concentrations

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

Digital Media Management. This concentration prepares graduates for technical positions in industries implement ing, planning, and producing interactive communications, integrated media, and multimed a for design, training, and market n_. Prospective students with A.A S degrees in areas such as multimedia, printing and publishing, commercial graphics, desktop pt blishing, or cc mputer illustration may be interested n pt rsuing a digital media n anagement con centrat c n

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
Introduction to the technologies involved in the design, image generation, transmission, and industrial production of multiple images for consumer utilization. Lecture, lab, field trip.

GIT 194 Special Topics. (1–4)
not regularly offered

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
Introduction to analyzing, planning, and executing graphic programs using industry standard programming tools. Lecture, lab. Prerequisite: ETC 100 or its equivalent.

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

GIT 237 Web Content Design. (3)
spring
Introduction to 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 310 Computer Graphics Programming (C++). (3)
fall and spring
Computer graphics software programming techniques in C++: 2D and 3D graphics: object oriented programming, transformations, scaling, and database concepts. Lecture, lab. Prerequisite: ETC 100 or GIT 215.
General Studies: CS

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, prototyping, 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 Graphic Systems. (3)
not regularly offered
Survey of graphic technology for private, public sectors, including hardware, software, storage, networking, Internet, telecommunications, and new media technologies. Lecture, lab. Prerequisite: junior standing in Information Technology, graphic information technology concentration.

GIT 337 Web Content Design. (3)
fall and spring
Introduction to 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)
not regularly offered

NOTE: For the General Studies requirement courses and codes such as L, SQ, C, and H, see "General Studies," page 78. For graduation requirements, see "University Graduation Requirements," page 74. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 51.

GIT 411 Computer Animation. (3)
fa and spr ng
2D and 3D computer an mat on methods. project p ann ng, scr pt ng storyboards, advanced mode ng, ght ng mater a s mapp ng, and mot on Lecture ab Prerequ s tes GIT 312 334

GIT 412 Multimedia Authoring, Scripting, and Production. (3)
fa l and spr ng
Pr du t on of mu t media projects us ng ndustry standard author ng app cat ons project management c ent cons derat ons and pro e t documentat on; user interface des gn interact v ty med a and data bases Lecture ab. Prerequ s tes G T 314

GIT 413 Professional Portfo io Design and Presentation. (3)
spr ng
D g ta med a portfo o des gn and product on p ann ng aud ence ana ys s med a se ect on, author ng med a formats product on copy r ght c ns derat ons market ng and de very Lecture ab. Prerequ s tes· GIT 314 334

GIT 414 Web Site Design and Internet/Web Technologies. (3)
spr ng
Web s te des gn authoring standards, protocols, too s and deve op ment techn ques for commerc a c ent s ded Web based graph c nfor mat n systems Lecture, ab Prerequ s tes G T 334 337

GIT 415 Computer Graphics: Business Planning and Management. (3)
spr ng
Imp ementation p ann ng feas bi ty and app cat o stud es needs assessment and operat ona analys s techn ques organ zat on ma a ger a and techno ogy cons derations bus ness p an deve opment Lecture ab, f e d t ps Prerequ s te sem r stand ng n nformat on Techno ogy graph c nformat on techno ogy concentrati)

GIT 417 Advanced Internet Programming. (3)
fa
Use ndust y standard programm ng anguages and techniques to create nteract ve graph c nformat on Web s tes and app cat ons Lec ture, ab Prerequ s te G T 414

GIT 432 Graphic Industry Business Practices. (3)
not regu ar y offered
Bus ness pract ces re ated to press prepress/Web ndustr es trade customs cost ana ys s market ng and management appr aches Lec ture ab f e d tr ps Prerequ s te. G T 414

GIT 435 Web Management and E-Commerce. (3)
ot regu ar y offered
Internet Web s te management se ur ty on ne databases and new E commerce bus ness mode s Lecture ab Prerequ s te G T 237 C requ s te G T 414

GIT 436 Gravure Technology. (3)
spr ng
In depth study of the market prof e and product on sequences re ated to the gravure method of pr nt ng Prerequ s te G T 135

GIT 437 Color Reproduction Systems. (3)
fa
Sc ent f c ana ys s f r the eng neer ng of co or reproduct on systems and color mode s used n the graph cs ndustry Prerequ s te G T 334

GIT 441 Graphic Information Systems. (3)
not regu ar y offered
Graph c nformat on systems common to the workp ace. graph c user nterfaces for on ine databases, geograph c, ndustr a arch tectura and management app cat ons Lecture, lab Prerequ s te sen or stand ng n nformat on Techno ogy graph c nformat on techno ogy concentrat on) Pre or c requ s te G T 434.

GIT 450 Digital Workflow in Graphic Industries. (3)
fa
Ana ys s of d g ta product on systems for nput assemb y, and output of graph c nformat n to pr nt and Web, nclud ng network ng and job track ng Lecture ab Prerequ s te GIT 334.

GIT 494 Special Topics. (1–4)
fa and spr ng
Poss ble top cs
a Computer Systems App cat o s 3

GIT 510 Computer Graphics Programming: Design, Customization, and Development. (3)
not regu arly offered
Advanced des gn deve opment, and documentat on of graph c app cat on pr gram Lecture ab

GIT 512 Multimed a Based Education and Training. (3)
fa
Creat ve des gn p ann ng deve opment, documentat on and produc tion of technology based earn ng and mu t med a-based educat on and tra n ng mater a and programs Lecture, ab Prerequisite GIT 412

GIT 537 Current Issues in Quality Assurance. (3)
not regu arly offered
D rected group study of se ected ssues re at g to qua ty assurance n the pr nt ng, publ sh ng and nformat on ndustry.

GIT 538 Personnel Development for the Graphics Industry. (3)
not regu ar y offered
Emp oyee tra n ng and deve opment spec fic to product on and man- agement the graph cs ndustry.

GIT 590 Read'ng and Conference. (1 12)
not regu arly offered

GIT 598 Special Top'cs. (1–4)
not regu ar y offered

ENVIRONMENTAL TECHNOLOGY MANAGEMENT (ETM)

ETM 301 Environmental Management. (3)
fal
Focuses on know edge and sk s necessary to ma age env ronmenta programs Perspect ves nc ude reg atory ndiv dua corporate and consu t ng Pre or corequ ites CHM 113 MAT 170

ETM 302 Water and Wastewater Treatment Technology. (4)
not regu ar y offered
Exp res the deve opment of treatment techno og es Addresses regu atory standards. Emphas zes theory and pract ce of system des gn aboratory ana ys standards and procedures Lecture ab Pre or corequ s te ETM 301

ETM 303 Environmental Regulations. (3)
fa and spr ng
Exp ores env ronmenta laws regu at ns and d rect ves Addresses a r and, and water Prerequ s te· ETM 301

ETM 360 Introduction to Emergency Management. (3)
fa
Emergency management theor es. C mprehens ve emergency man agement Mit gation preparedness response and recovery Post d sasters and pol cy format on Current FEMA a hazards approach

ETM 362 Managing Natural and Technological Disasters. (3)
spr ng
Federa state and oca resp n es to emergenc es Management of mass casua ties evacuat on shelter ng and terr r sm· dec aration of emergency procedures

ETM 363 Computer Applications in Emergency Management. (3)
spr ng
Exp ores spec f c c mputer programs wh ch are current y n use for cont ngency p ann ng, track ng chem ca nventories, and response resources Cr s sted as FSM 363 Cred t is a owed for only ETM 363 o FSM 363.

ETM 364 Toxicology and Biohazards in Emergency Management (3)
fa
ntroduction to poisons Dose response routes of exposure and tox co k net cs D seases assoc ated w th natura d saste s C n ca presenta t on of treatments.

ETM 401 Hazardous Waste Management. (3)
fal and spr ng
Defin t on of hazardous waste RCRA c ass f cat on and OSHA crite r a Overv ew of requ rements and methods of waste management Prerequ s te ETM 301

ETM 402 Unit Treatment Technologies. (3)
spr ng
Addresses var ous treatment techno og es for contam nated a r water and so Emphas zes des gn based upon med um type of contam na t on and concentrat on Prerequ s te ETM 302

ETM 406 Environmental Chemistry. (3)
fa and spr ng
Exam nes react ons, transport, and fates of hazardous chem ca s in water so a r and v ng organisms Prerequ s tes both CHM 113 and 115 or on y CHM 114 MAT 170

ETM 407 Occupational Hygiene. (3)
spr ng
Overv ew of occupationa health hazards nc ud ng recogn t on, evalu at on and control nc udes regu atory status and health standards Prerequ s tes CHM 101 or 113 or 114 MAT 170

ETM 424 Comprehensive Emergency Management. (3)
summer
Addresses theory and management techniques for emergency pre paredness c ud ng mit gation preparedness, resp nse, and recov ery Pre or corequ s te ETM 301

ETM 426 Environmental Issues. (3)
spr ng
Explores the sc ence and po cy imp cat ons of contemporary prob ems that threaten the env ronment. Pre or corequ s tes: CHM 113; MAT 170

ETM 428 Internat onal Environmental Management. (3)
summer
Emphas s on techno og ca and econom c pressures experienced by deve op ng countries. Prerequ s te ETM 301

ETM 460 Incident Management Systems and Emergency Operations Center. (3)
fa l
Covers IMS, term no ogy p ayers and management ph osophy EOC setup, act vat on, perat on, and term nat on EOC fund ng and po t cs Cross sted as FSM 460 Cred t s al owed for only ETM 460 or FSM 460

ETM 461 Contingency Planning. (3)
not regu arly offered
Provides understand ng of techn ques for n house or n s te plann ng as we as commun ty p ann ng.

ETM 468 Simulation and Exercising. (3)
not regu ar y offered
Requ rements p ann ng conduct and crit que of exerc ses re ated to emergency p ann ng Emphas s n rea sm us ng moulage and props

ETM 494 Special Topics. (1–4)
spr ng
Poss b e top cs·
a) B remediat on. 3
Techn ca regulatory and po cy ssues emanat ng fr m m neta ng and an ma waste Lecture, case stud es

ETM 501 Pr nciples of Hazardous Materials and Waste Management. (3)
fa
Foundat n for courses n curr cu um Top cs nclude def n t ons of tox c and hazardous substances and wastes RCRA c ass f cat on, and OSHA cr ter a. Pre or corequ s tes: both CHM 113 and 115 or only CHM 114

ETM 502 Regulatory Framework for Toxic and Hazardous Substances. (3)
fa
Exam nes federa state and oca regu at ons for hazardous mater a s and wastes. Inc udes h'story and trends n regulatory deve opment Prerequ s te ETM 501.

ETM 503 Principles of Toxicology. (3)
spr ng
nteract on of chem ca s w th fe and env ronment Mechan sms of tox c act on dose re ponse re at onsh ps tox c ty test ng mode s pre d ct ve tox co ogy, and ep dem o ogy. Prerequ s tes both CHM 113 and 115 or only CHM 114

ETM 504 Technology for Storage, Treatment, and Disposal of Hazardous Materials. (3)
fal
Current and state of the art technolog es and future trends for storage treatment and d sposa of hazardous mater als and waste. Prerequ s tes both CHM 113 and 115 or on y CHM 114 ETM 501

ETM 505 Quantitative Analysis and Practical Laboratory Techniques. (3)
fal and spring
EPA methodo g es for samp ng and ana ys s f o ls and water nc udes qua ty assurance and regu atory requ rements. Lab s arranged off s te Prerequ s tes both CHM 113 and 115 or on y CHM 114 231, MAT 170

ETM 506 Chemistry of Hazardous Materials. (3)
fa
Chem stry and tox co ogy of hazardous chemicals Top cs nc ude proper hand ng storage transportat on and d sposa Prerequ s tes b th CHM 113 and 115 or on y CHM 114 MAT 170 Corequ s te CHM 231

ETM 507 Industrial Hygiene. (3)
not regu ar y offered
Emphas s on chem cal hazards n ndustria settings Topics include recogn z ng and measur ng hazards, control techn ques and regu a tory standards Prerequ s tes both CHM 113 and 115 or only CHM 114 MAT 170

ETM 522 Air Pollution and Toxic Chemicals. (3)
fall
Exam nes ssues in the measurement ana ysis and contro of tox c chem cals n a r po lut on Prerequ s tes both CHM 113 and 115 or on y CHM 114 ETM 501, MAT 170

ETM 523 Soils and Groundwater Contamination. (3)
fa
Theoret ca and pract ca hydrogeo ogy as it app es to clean ng up contam nat on nvest gat ve techn ques monitoring r sk assumptions, and assessment methodology Prerequ s tes both CHM 113 and 115 or on y CHM 114; ETM 501 MAT 170 Corequ s te CHM 231.

ETM 524 Emergency Preparedness, Response, and Planning for Hazardous Materials. (3)
summer
In house r on site emergency response contingency plann ng Preemergency assessment resources for cooperat on equ pment requ rements, and coord nation w th other agenc es Prerequ s tes b th CHM 113 and 115 or only CHM 114· ETM 501· MAT 170

ETM 525 Risk Assessment for Hazardous Materials. (3)
spring
Appl es the r sk assessment process in s tuations rang ng from haz ardous fac it es regu at on to tox c substances n the environment Prerequ s tes both CHM 113 and 115 or only CHM 114 ETM 501, MAT 170

ETM 526 Current Environmental Technology Issues. (3)
fa l
In depth study of current ssues n env ronmenta technology fac ng both the pr vate and pub c sectors.

ETM 527 Environmental/Resources Regulations Concepts. (3)
spr ng
Deve ops env ronmenta regu at ons from common law to statutory requ rements Emphas s on Superfund, hazardous mater a s tox cs and ab ty contracts Pre or corequ site: ETM 501

ETM 591 Graduate Seminar. (1)
not regu ar y offered

ETM 592 Research. (1 12)
not regu arly offered

ETM 598 Special Topics. (1–4)
spr ng
Poss ble top cs·
a Advanced B oremed at on (3
Manageme t a d po cy ssues re ated to bioremediat on of m ne ta' ng and an mal waste and rep acement of chem cal contro w th b o og ca methods Lecture, case stud es

FIRE SERVICE ADMINISTRATION (FSA)

See the *Graduate Catalog* for the FSA courses.

FIRE SERVICE MANAGEMENT (FSM)

FSM 304 Fire Personnel Management. (3)
fa
T p cs nc ude promotion personne deve opment career and ncen t ve systems va dat on of phys ca requ rements manager a and superv'sory procedures

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NOTE: For the Genera Stud es requ rement courses and codes such as L, SQ, C, and H see "Genera Studies page 78 For graduat on requ rements see Un vers ty Graduat on Requ rements " page 74 For an exp anat on of add t ona omn bus courses offered but not isted n th s cata og, see "C ass f cat on of Courses " page 51.

FSM 305 Quality Emergency Services. (3)
not regu ar y offered
Covers qua ty ssues re at ng to serv ces de vered by progress ve f re departments Covers management f personne and resources dur ng organ zat ona change

FSM 306 Fire Prevention Organization and Management. (3)
not regu ar y offered
Exam nes and eva uates the techn ques procedures, programs and agenc es nvo ved n prevent ng f res

FSM 363 Computer Applications in Emergency Management. (3)
spr ng
Exp ores spec f c omputer programs wh ch are current y n use for cont ngency p an g, track ng chem ca nventor es and resp se resources Cross- sted as ETM 363 Cred t s a owed f r on y ETM 363 or FSM 363

FSM 400 Human Behavior and the Fire Threat. (3)
not regu ar y offered
Proper ways f conduct ng post f re nterv ews emphas zes the psy ch g ca effects of commun cat ons dur ng emergenc es

FSM 421 Political and Legal Consideration in Fire Science. (3)
sp ng
Study of ega and po t ca cons derat ons that affect the dec s on mak ng of f re serv ce managers

FSM 425 Fire Service Administration. (3)
fa
Presentat on of modern management a d p a n ng techn q es that app y to organ z ng a f re department

FSM 460 Incident Management Systems and Emergency Operations Center. (3)
fa
Covers IMS, term no ogy, p ayers, and management ph osophy EOC setup act vat on operat on and term nat on EOC fund ng and po t cs Cr ss sted as ETM 460 Cred t s a owed for on y ETM 460 or FSM 460

FSM 494 Specia Topics. (1–4)
not regu ar y offered

FSM 598 Special Topics. (1–4)
not regu ar y offered

INFORMATION AND MANAGEMENT CORE (IMC)

IMC 233 Desktop Publishing and Infographics. (3)
fa and spr ng
ntr duct on to software and hardware used for desktop pub sh ng and nf graph cs Lecture, ab

IMC 294 Special Top cs. (1–4)
not regu ar y ffered

IMC 331 Quality Assurance. (3)
spr ng
nstrumentat on and methodo og es for mater a s test ng and qua ty contro n var ous manufact r ng processe Lecture fie d tr ps

IMC 346 Management Dynamics (3)
fa and spr ng
Ma ageme t ha enges and the eadersh p sk s needed to ach eve organ zat a ob ect ves n the cha g ng ndustr a and techn ca env - ronments Prerequ s te un or stand ng.

IMC 396 Professional Orientation. (1)
fa and spr ng
Sen or adv sement ndustry presentat ons and career c unse ng

IMC 470 Project Management. (3)
spr ng
nt oduct on to techn ques fo manag ng sma groups w th n arger organ zat ons nc ud ng team bu d ng, mot vat ng p ann ng track ng act v t es and computer too s Prerequ s tes ECN 111; IMC 346 ITM 344

IMC 498 Pro Seminar. (1 7)
not regu ar y offered

IMC 499 Individualized Instruction. (1 3)
not regu ar y offered

IMC 584 Internship. (1 3)
fa and spr ng

IMC 590 Reading and Conference. (1–12)
not regu ar y offered

IMC 592 Research. (1 12)
fa and spr ng

IMC 593 Applied Project. (1–12)
fa l and spr ng

IMC 595 Continuing Registration. (1)
not regu arly offered

IMC 599 Thesis. (1–12)
fa and spr ng

INDUSTRIAL TECHNOLOGY MANAGEMENT (ITM)

ITM 343 Occupational Safety and Ergonomics. (3)
fa
Hea th and safety movement acc dent theor es and effects OSHA standards and l ab ty, safeguard ng, hazards workers compensation ergonom cs, and safety. Prerequis te jun or stand ng.

ITM 344 Industr'al Organizat'on. (3)
spr ng
ndustr a organ zat on concepts Top cs re ate to ndustria relat ons governmenta regu at ons organ zat ona str cture abor re at ons h man factors and current ndustr a pract ces. Prerequis te· IMC 346.

ITM 345 Publ c Sector Management. (3)
fa and spr ng
Management n government and pub c agenc es Inc udes m ss on p anning and organ z ng to prov de services, human resource ssues conf ct resolut on, coord nat on Prerequ s te un or stand ng

ITM 402 Legal Issue for Technologists. (3)
fa
Amer an lega system and mpact on techno ogy management ssues contracts torts, nte ectua property wh te col ar cr me, ant - trust env r nmenta and emp oyment

ITM 405 Forecasting and Evolution of Technology. (3)
not regu arly offered
H story and ev ut onary nature of selected techno og es, ssues in the management of emerg ng techno og es and methods of techno og ca forecast ng Prerequ s te. IMC 346 or ts equ va ent).

ITM 430 Ethical Issues in Technology. (3)
spr ng
Top cs n s c a respons b ty for ndustr a techno ogy and eng neer- ng Prerequ site MC 346

ITM 440 Introduction to International Bus'ness. (3)
spr ng
Internat ona b s ness pr nc p es and operat ons, nclud ng partner sh ps, trade agreements, currency ssues, nternat onal sales, and cu tura d fferences between countr es Prerequ s te MC 346
Genera Stud es. G

ITM 445 Industrial Internship. (1–10)
fa spr ng, summer
Work exper ence ass gnment n ndustry commensurate w th student s program Spec al zed nstruct on by ndustry w th un versity superv - s n Pass fa Prerequ s tes· adv s r approva jun or stand ng, 2 50 GPA

ITM 451 Industrial Distribution and Materials Management. (3)
not regularly offered
Surveys top c n ndustr a d str but on nc ud ng, but not m ted to materia s hand ng purchas ng, rece v ng, warehousing traff c, nven tory contro and sh pp ng. Prerequ s te IMC 346 or ITM 343.

ITM 452 Industrial Human Resource Management. (3)
fa
Concepts and practices of human resource management n a g oba ndustr a env ronment Prerequ s te IMC 346

ITM 453 Safety Management. (3)
not regu ar y offered
Deve opment and management of safety programs education and tra n ng, and re at onsh ps w th n an organ zat on. Prerequ s te ITM 343 or nstructor approval

ITM 455 Industrial Marketing Concepts. (3)
not regu ar y offered
Cust mer and sa es strateg es for ndustr al organizat ons, nc ud ng current pract ce and future p ann ng Prerequ s tes ECN 111, MC 346 j nior stand ng

ITM 456 Introduction to Organized Labor. (3)
spr ng
ntroduct on to abor relat ons unio s, federat ons co ect ve bargain ng gr evances and abor egislat on Prerequ sites· MC 346, TM 344

ITM 461 Operations Management. (3)
fa l
Introduct on to superv sory pr nc ples as app ed t product on of goods and serv ces. Prerequ s tes MC 346, TM 344.

ITM 480 Organizationa Effectiveness. (3)
spr ng
Human aspects of supervisory behav or n the dustr a sett ng and how they nf uence eff c ency morale and organ zat ona pract ces Prerequ s te MC 346

ITM 494 Special Topics. (1–4)
not regu ar y offered

ITM 501 Managerial Economics. (3)
not regu arly offered
Ba ic manager a econom c too s and techn ques app ed to un que concerns of sc ent f ca y intensive f rms operat ng in rap d y evo v ng ndustr a sectors.

ITM 502 Financial Management. (3)
not regu ar y offered
Exam nes corporate f nanc a and manager a account ng systems, budget ng a d f nanc a pol cy us ng m c ocomputers to ana yze fore cast, and report nfo mat on

ITM 503 Marketing Management. (3)
not regu ar y offered
Modern methods and ndustr a case stud es of p ann ng pr c ng pro mot ng, and d str but ng goods and serv ces n the g oba marketp ace Prerequ s tes TM 480 or ts equ valent nstructor approva

ITM 504 Law and Ethics for Technical Professionals. (3)
not regu arly offered
Ana yzes egal and eth ca framework for mak ng manager a dec s ons n the corporate env ronment of eng neer ng- and techn ogy re ated ndustries.

ITM 520 Strategic Management of Technology. (3)
not regu a ly offe ed
Ana yzes entrepreneur a dynam cs and techno ogy deve opment, methods of research and deve opment management, new technology mplementat on and start up organ zat on Prerequ s tes· TM 480 (or ts equiva ent nstructor approva

ITM 540 International Management. (3)
not regu ar y offered
Practices and procedures for effect ve management of mult national bus ness organ zat ons nc ud ng partnersh ps, jo nt ownersh ps and g oba subs d ar es

ITM 548 Statistical Methods for Research. (3)
not regu arly offered
Mult'variate statist ca techn ques to ana yze research data Uses sta t stica software and app cat ons Prerequ s te STP 420 or ts equ va- lent

ITM 549 Research Techniques and Applications. (3)
fa l and spr ng
Se ect on of research problems ana ys s of l terature nd v dua nves t gat ons prepar ng reports, and proposa wr t ng Prerequ s te STP 420 or ts equ va ent

ITM 550 Industrial Tra ning and Development. (3)
not regu ar y offered
Tra n ng techn ques and earn ng processes. P anning develop ng evaluat ng, and manag ng ndustr a and governmenta programs Pre requ s te TM 480.

ITM 552 Global Management Philosophies. (3)
not regu ar y offered
Ana yzes and compares s gn f cant superv s on ph osoph es deve oped n var ous industr a nat ons and the r potent a app cat on n the Un ted States.

ITM 560 Managerial Decision Making. (3)
fa
Ana yzes common dec s on mak ng b as and techn ques to overcome them Uses both subject ve quant tat ve dec s on too s and computer ized dec s on a ds

ITM 570 Advanced Project Management. (3)
spr ng
P ann ng organ z ng, coordinat ng and contro ng staff and project groups to accomp sh the project object ve

ITM 593 Applied Project (1 12)
not regu ar y offered

ITM 598 Special Topics. (1–4)
not regu arly offered
Poss ble top cs·
a Quant tat ve Research Ana ys s

Department of Manufacturing and Aeronautical Engineering Technology

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PROFESSOR
COLLINS

ASSOCIATE PROFESSORS
DAN ELSON, NAM, PALMGREN RAJADAS, ROGERS SCHM DT

ASSISTANT PROFESSOR
POST

PURPOSE

The mission of the Department of Manufacturing and Aeronautical Eng neering Technology is to emphasize applied engineering practice in the manufacturing and aero space fields through four year degree programs in Manufacturing Engineering Technology and Aeronautical Engineering Technology. This is accomplished by the application of math and science principles to the solution of technical problems in a lecture laboratory environment. The goal of the Manufacturing Engineering Technology program is to prepare students for employment in areas such as materials, mechanics, design manufacturing processes, automation, and quality control The department actively supports the student chapter of the Society of Manufacturing Engineers. The purpose of the Aeronautical Engineering Technology program to is prepare students for employment in areas such as aircraft and aerospace vehicle design, and manufacturing, applied thermodynamics, fluid mechanics and aerodynamics, propulsion, and wind tunnel testing. For more informa tion, access www east asu.edu ctas/maet on the Web.

ACCREDITATION

The B S degree in Manufacturing Engineering Technol ogy and the B.S. degree in Aeronautical Engineering Tech nology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc (See "Accreditation," page 633, for more information.

NOTE: For the Genera Stud es requ rement courses and codes such as L, SQ C, and H see Genera Stud es " page 78 For graduation requ rements see 'Un vers ty Graduat on Requ rement page 74 For an explanat on of add t ona omn bus courses offered but not sted n th s cata og, see "C ass fcat on of Courses, page 51

DEGREES

The Department of Manufacturing and Aeronautical Engineering Techno ogy offers the B.S. degree in Manutac turing Engineering Technology and the B S degree in Aeronautical Engineering Technology.

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

A Master of Science in Technology degree is offered for graduate study. See the *Graduate Catalog* for more informa tion.

B.S. Degree Requirements

All degree requirements for the program are shown on curriculum check sheets. Requirements include First Year Composition, University General Studies (see "General Studies," page 78), and the Engineering Technology Core. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses. To graduate, students are required to complete a minimum of 128 semester hours with a 2.00 cumu ative GPA, including at least 50 semester hours of upper division courses.

Manufacturing Engineering Technology—B.S.

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

Engineering technology core	14
First Year Composition	6
General Studies department requirements	45
Manufacturing Engineering Technology major	52
Selected concentration	11
Total	128

The following courses constitute the Manufacturing Engineering Technology major and are required of all man ufacturing 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 4
MET	302	We ding Surv ey 3
MET	313	Applied Engineering Mechanics: Materials 4
MET	331	Design for Manufacturing I 3
MET	341	Manufacturing An alysis 3
MET	344	Casting and Forming Pr cesses 3
MET	345	Advanced Manufac turing Processes 3
MET	396	Manufacturing Profess nal Orientation 1
MET	401	Quality Assurance 3
MET	416	Applied Computer ntegrated Manufacturing *CS* 3
MET	443	N C 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 Pro ect II 3
Total		52

A student participating in the Manufacturing Engineering Technology program may select from two concentrations manufacturing engineering technology or mechanical engi neering 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 is intended to prepare stu dents to meet the responsibilities in planning the processes of production, developing the tools and machines, and inte grating facilities for production or manufacturing.

Students may select course work that focuses on the implementation of design and manufacturing strategies that favorably impact the environment Concepts ike design for recyclability, manufacturing material reuse, and air quality control during manufacturing are addressed. Required courses follow:

MET	438	Design for Manufa turing II 4
MET	442	Specialized Production Processes 3
Technical electives		4
Total		11

Mechanical Engineering Technology Concentration. The primary objective of the mechanical engineering techno o_y concentration is to prepare students for entry level work in mechanical design and testing, either in engineering or man ufacturing departments in product-oriented industries. Major emphasis is placed on reducing the amount of time required by industry to make the graduate productive in any area of work. Students obtain a well rounded academic background with an emphasis in mechanics and thermal sci ences Required courses follow:

AET	415	Gas Dynamics and Propu sion 3
MET	434	Applied F uid Mechanics 3
MET	438	Design for Manufacturing II 4
Approved technical elective		1
Total		11

Aeronautical Engineering Technology—B.S.

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

Aeronautical Engineering Technology major	63
Engineering technology core	14
First Year Composition	6
General Studies department requirements	45
Tc tal	128

The following courses constitute the Aeronautical Engi neering Technology major and are required of all Aeronauti cal Engineering Technology students.

Aeronautical Engineering Technology Major

AET	150	Introduction to Aeronautical Engineering Technology 1
AET	210	Measurements and Testing. 3
AET	215	Mechanics of Aerospace Systems 3
AET	300	Aircraft Design I 3
AET	312	Applied Engineering Mechanics Dynamics 3
AET	396	Aerospace Professional Orientation 1
AET	415	Gas Dynamics and Propulsion 3
AET	417	Aerospace Structures 3
AET	420	Applied Aerodynamics and Wi d Tunnel Testing 4
AET	432	Applied Heat Transfe 3
AET	487	Aircraft Design II 3
EET	406	Control System Techn logy 4
MET	231	Manufacturing Processes 3
MET	300	Applied Mate ial Science 4

MET 313 Applied Engineering Mechanics. Materials 4
MET 331 Design for Manufacturing I 3
MET 432 Thermodynamics II 3
MET 434 Applied Fluid Mechanics 3
Programming Language course 3
Technical elective. 6

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 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 total of 120 semester hours is required for graduation.

A.A.S. degree transfer . . 60
Assignable credit. 6
B.A.S. core 15
General Studies 9
Technical concentration 2

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.

IMC 470 Project Management 3
ITM 344 Industrial Organization 3
MET 401 Quality Assurance 3
MET 416 Applied Computer Integrated Manufacturing *CS* . . . 3
TWC 40 Technical Communications *L* 3

Total 15

Technical Concentration

Production Technology. 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.

AERONAUTICAL ENGINEERING TECHNOLOGY (AET)

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

AET 150 Introduction to Aeronautical Engineering Technology. (1)
fall
Introduction to the fields of aeronautical engineering and engineering technology

AET 191 First-Year Seminar. (1–3)
not regularly offered

AET 194 Special Topics. (1–4)
not regularly offered

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)
not regularly offered

AET 300 Aircraft Design I. (3)
fall
Basic applied aerodynamics propeller performance and airplane performance analysis Fee Prerequisites AET 210 and 215 or AMT 280 and 287) ETC 100 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 Prerequisites ETC 201 MAT 261 Prerequisite 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)
not regularly offered

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

AET 409 Nondestructive Testing and Quality Assurance. (1)
not regularly offered
Purpose of inspection and quality assurance Theory and application of nondestructive inspection methods Application of pertinent standards, specifications and codes Lecture, lab Cross listed as AMT 409 Credit is awarded for only AET 409 or AMT 409 See AET Note 1 Prerequisite AMT 280 or MET 230

NOTE: For the General Studies requirement courses and codes (such as L SQ C and H see "General Studies" page 78. For graduation requirements, see University Graduation Requirements" page 74 For an explanation of additional commonly courses offered but not listed in this catalog see "Classification of Courses" page 51

AET 415 Gas Dynamics and Propulsion. (3)
spr ng
ntroduction to compress b e f ow nterna and externa f ow and aero thermodynam c ana ysis of pr pu on systems Prerequ s te MET 434

AET 417 Aerospace Structures. (3)
fa l
Analys s and des gn of a rcraft and aerospace structures Shear f ow Sem monocoque structures Effects of dynam c load ng Prerequ - s tes AET 300 312 MET 313

AET 420 Applied Aerodynamics and Wind Tunnel Testing. (3)
fa
Introduct n to v scous and nv sc d f ow and the r re at onsh p to a r craft ft and drag Wind tunne des gn and test ng Lecture ab Prerequ s tes AET 300 MET 434

AET 432 Appl ed Heat Transfer. (3)
fa
Steady state and trans e t conduct n, heat transfer by convect on and rad at on App cat ons of heat transfer Prerequ s te MET 434 or nstructor approva

AET 484 Internship. (1 12)
not regu ar y offered

AET 487 Aircraft Design II. (3)
spr ng
Bas c aerodynamics and a rp ane performance ana ys s methods app ed to pract ca des gn project Prerequ s te AET 300

AET 490 Advanced Applied Aerodynamics. (3)
not regu ar y offered
Study of f u d mot on and aerodynam cs. Essent a s of ncompressib e aerodynam cs and computat ona f u d dynam cs E ements of am nar and turbu ent f ows Prerequisites AET 312 ETC 100 MAT 262

AET 492 Honors Directed Study. (1–6)
not regu arly offered

AET 493 Honors Thesis. (1–6)
not regularly offered

AET 494 Special Topics. (1–4)
not regular y offered

AET 498 Pro-Seminar. (1–7)
not regu ar y offered

AET 499 Individualized Instruction. (1 3)
not regu ar y offered

AET 500 Research Methods. (1 12)
not regu ar y offered

AET 524 Application of Heat Transfer. (3)
fal
Energy conservat on steady state and trans ent conduct on, convec t on transfer free and forced convect on Reyno ds analogy b ackbody and env ronmenta rad at on. Prerequ s te MET 434 or nstructor approval

AET 525 Advanced Propulsion. (3)
spring
Mechan cs and thermodynam cs of propu sion systems So id f qu d prope ant rocket des gn performance E ectr ca nuc ear propu s on systems Space m ss ons Prerequ s tes both AET 415 and 420 or MET 434 or on y nstructor approva

AET 560 Numerical Methods in Engineering Technology. (3)
not regu ar y offered
Ana yz ng problems n phys cal sciences mode ng of phys ca prob- ems perturbat n techn ques curvef tt ng, data ana ys s numerical so ut ons, ord nary and partia d fferent a equat ons

AET 580 Practicum. (1 12)
not regu ar y offered

AET 583 F eld Work. (1–12)
not regular y offered

AET 584 Internship. (1–12)
not regu arly offered

AET 590 Reading and Conference. (1 12)
not regu arly offered

AET 591 Seminar. (1 12)
not regu arly offered

AET 592 Research. (1 12)
not regular y offered

AET 593 Applied Project. (1 12)
not regu arly offered

AET 594 Conference and Workshop. (1–12)
not regu ar y offered

AET 595 Continuing Registration. (1)
not regu ar y offered

AET 598 Special Topics. (1–4)
not regu ar y offered

AET 599 Thesis. (1 12)
not regu arly offered

MANUFACTURING ENGINEERING TECHNOLOGY (MET)

MET 191 First-Year Seminar. (1–3)
not regu ar y offered

MET 194 Special Topics. (1–4)
n t regularly offered

MET 230 Engineering Materials and Processing. (3)
fa spr ng, summer
Mater a s the r structures propert es fabr cat on character st cs and app cat ons Mater a form ng jo n ng, and f n sh ng processes Auto mat on and qua ty contro

MET 231 Manufacturing Processes. (3)
fa
Des gn documentat on and mater a processes on plast cs, ferrous and nonferrous mater a s emphas z ng orthographic pro ect on geo- metr c d mens on ng and to erances. Lecture ab. Prerequ s te MAT 117 or 170.

MET 294 Special Topics. (1–4)
not reg ar y offered

MET 300 Applied Material Science. (4)
fa
Pr nc p es of materia s sc ence emphas z ng concepts re evant to manufactur ng and use Discusses metals polymers ceram cs and compos tes 3 hours ecture, 1 hour ab Prerequ s te MET 231 or nstructor approva

MET 302 Welding Survey. (3)
fa
Theory and app cation of ndustr a we d ng processes, ntroductory we d ng metal urgy and we dment des gn SMAW GTAW GMAW oxy acety ene and braz ng exper ences Lecture, lab Prerequ s te: jun or or senior stand ng

MET 313 Applied Engineering Mechanics: Materials. (4)
fa spr ng, summer
Stress stra n re at ons between stress and stra n shear, moments def ect ons, and comb ned stresses. 3 hours ecture 1 hour ab Pre requ s te· ETC 211

MET 331 Design for Manufacturing I. (3)
spr ng
Introduct on to design of mach nes and structures w th emphas s on ayout des gn draw ng. Emphas zes bas cs f gears cams fasteners spr ngs bear ng nkages cy ndr ca f ts, f at pattern deve opment, and surface f n sh requ rements Prerequ s te MET 313

MET 341 Manufacturing Analysis. (3)
spr ng
Organ zat on and funct ona ndustr a requ rements. Manufactur ng econom cs and gr up techno ogy. Wr t ng assemb y and product on p ans. Ana ys s on ndustr a spec f cations Prerequ s te MET 231 or 343

MET 343 Material Processes. (4)
spr ng
Industr a processing as app ed to ow med um and h gh vo ume manufactur ng Bas c and secondary process ng fastening and join- ng, coat ng and qua ty contro Lecture, ab

MET 344 Casting and Forming Processes. (3)
spr ng
Ana yzes var ous form ng processes to determ ne l ad requ rements necessary for a part cu ar meta -form ng operat on nformat n used to se ect equ pment and des gn too ng Meta cast ng processes and des gn of cast ngs ntroduct on to powder meta urgy Prerequ s tes b th MET 300 and 313 or on y nstructor approva

MET 345 Advanced Manufacturing Processes. (3)
spr ng
Mater al remova processes emphas z ng advanced turn ng m l ng and mach nabi ty stud es us ng cutt ng too s CNC programm ng for mach n ng and turn ng centers Lecture ab. Prerequ s te MET 231.

MET 346 Numerical Control: Point-to-Point and Continuous Path Programming. (3)
not regularly offered
Methods of programming set up and operat'on of numer cal control mach nes emphas zing athe and mi systems. Lecture, ab Prerequ - s te: MET 231

MET 394 Special Topics. (1–4)
not regularly offered

MET 396 Manufacturing Professional Orientation. (1)
fall
Career focus for Manufacturing Engineer ng Techno ogy students Fam iarization w th the manufacturing ndustry Prerequisite: jun or standing

MET 401 Quality Assurance. (3)
spring
Introduct on to stat stical qual ty contro methods des gn of experi ments, samp ing gage requ'rements, spec f cat ons qual ty assurance too s emphas z ng CNC-CMM programm ng Lecture ab Prerequi- s te jun or stand ng

MET 409 Applied Engineering Economics. (3)
spring
Fundamenta s of eng neer ng econom cs in a pract ca ndustry-based approach ncludes effects of deprec ation taxes inf ation and rep acement ana ys s Lecture computer lab exper ences

MET 415 Manufacturing Simulation. (3)
spring
Computer s mu ation of manufacturing operations D screte event sim- u ation models range from ndiv dual processes to who e factor es Lecture, computer ab exper ences. Prerequ s te MET 345

MET 416 Applied Computer-Integrated Manufacturing. (3)
fall
Techn ques and pract ces of computer 'ntegrated manufacturing with emphas's on computer aided des gn and computer aided manufactur- ing Prerequisite: MET 345
General Stud es: CS

MET 432 Thermodynamics. (3)
spring
Thermodynamics of mixtures Combust on process. Appl es thermo dynam cs to power and refr gerat on cyc es Prerequ s te ETC 340.

MET 433 Thermal Power Systems. (4)
not regularly offered
Analyzes gas power vapor power and refr gerat on cyc es Compo nents of a r conditioning systems D rect energy convers on Psy chrometry. Analyzes nterna combust on engines and f u d mach nes Lecture lab Prerequis'te. MET 432 or nstructor approva

MET 434 Applied Fluid Mechanics. (3)
spring
F u d stat cs Bas c f u d f ow equat ons V scous f ow n pipes and channe s Compress b e flow App 'es f u d measurement and f ow in condu ts. Prerequ site ETC 340

MET 435 Alternate Energy Sources. (3)
not regu arly offered
A ternate energy systems energy use and ts mpact on the env ron ment and demonstrat ng practica a ternative energy sources to fossil fue s Prerequ s te nstructor approval

MET 436 Turbomachinery Design. (3)
not regu arly offered
Appl es thermodynam cs and fluid mechanics to the ana ysis of machinery des gn and power cycle performance pred ctions Prerequ sites· ETC 340; MET 434

MET 438 Design for Manufacturing II. (4)
fall
App es mechan cs n des gn of machine e ements and structures Uses exper menta stress analys s in design eva uation Lecture, lab Prerequisite: AET 312 or MET 331 or nstructor approva

MET 442 Specialized Production Processes. (3)
fall
Nontradit ona manufacturing processes emphasizing EDM, ECM, ECG CM PM HERF, EBW and LBW. Prerequ's te· MET 231

MET 443 CNC Computer Programming. (3)
fall
Theory and app cation of N C languages us ng CAM software and CNC mach ne tools Lecture lab Prerequisite MET 345 or instructor approval

MET 444 Production Tooling. (3)
fa l
Des gn and fabr cat on of j gs fixtures and spec a ndustr al too ing re ated to manufacturing methods Lecture ab Prerequ s te MET 345

MET 448 Expert Systems in Manufacturing. (3)
not regu arly offered
Introduct on to expert systems through conceptua ana ys s with emphas's on manufact ir ng appl cat ons Prerequ s te. MET 231

MET 451 Introduction to Automation. (3)
spr ng
ntroduct on to automat on Top cs nc ude assemb y techn ques f xed and flex b e automation systems, robots mater a hand ing systems sensors and contro s Lecture, ab Prerequ s te MET 346.

MET 452 Implementation of Robots in Manufacturing. (3)
not regularly offered
Robot c workce des gn nc ud ng end effectors, parts presenters and optimum mater al flow Prerequ site MET 451 or instructor approva

MET 453 Robotic Applications. (3)
spring
Lab course uti z ng robots and other automated manufactur ng equ p ment to produce a part Students are required to program robots as we l as nterface the robots w th other equ pment. Prerequ site· instructor approva

MET 460 Manufacturing Capstone Project I. (3)
fal
Sma group projects des gning evaluat ng, and ana yzing compo nents assembl es and systems Deve op products manufactur ng techn ques demonstrat ng state of the art technology Lecture, lab Prerequ s tes MET 331, 341 346 senior stand ng.

MET 461 Manufacturing Capstone Project II. (3)
spr ng
Sma -group projects app y ng manufactur ng techn ques, with empha- sis on demonstrat ng state of the art technology Lecture, ab Prereq- u s te MET 460 or nstructor approval.

MET 484 Internship. (1 12)
not regular y offered

MET 492 Honors Directed Study. (1–6)
not regularly offered

MET 493 Honors Thesis. (1–6)
not regularly offered

MET 494 Special Topics. (1–4)
fa l and spring
Possib e top cs
(a) Consumer Manufactur ng 1 3)
(b) Manufactur ng Process S mu ation (1 3)
(c) Packag ng Des gn (1–3)

MET 498 Pro-Seminar. (1 7)
not regularly offered

MET 499 Individualized Instruction. (1–3)
not regular y offered

MET 500 Research Methods. (1 12)
not regularly offered

MET 501 Statistical Quality Control Applications. (3)
spr ng
SPC problem-so v ng techn ques for mplementat on n ndustr a set t ng; des gn and ana ys's of exper ments Prerequ s te instructor approva

MET 502 Specialized Production Processes. (3)
fa l
Spec a ized production processes nc ud ng asers e ectron c beam abrasive and water jet and chem cal and therma processes Prereq u s te nstructor approval

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NOTE: For the Genera Stud es requ rement, courses and codes (such as L SQ C, and H), see "Genera Stud es," page 78 For graduat on requirements see "Un vers ty Graduat on Requirements," page 74. For an explanation of add t onal omn bus courses offered but not sted in this cata og see "C assif cation of Courses," page 51

MET 504 Applications of Production Tooling. (3)
fall
Design and fabrication of fixtures, jigs, templates, and specialized industrial tooling for manufacturing. Lecture, lab. Prerequisite: instructor approval.

MET 507 Manufacturing Enterprise. (3)
fall and spring
Organization and project management of cellular manufacturing methods, including IIT and lean manufacturing. Prerequisite: instructor approval.

MET 509 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 512 Introduction to Robotics. (3)
not regularly offered
Introduction to industrial robots. Topics include: robot workspace, trajectory generation, robot actuators and sensors, design of end effectors, and economic justification. Application case studies. Prerequisite: instructor approval.

MET 513 Advanced Automation. (3)
fall
Analysis and design of hard and flexible automation systems. Particular attention to material-handling technology. Prerequisite: instructor approval.

MET 514 CNC Computer Programming. (3)
spring
Theory and application of N/C languages using CAM software and CNC machine tools. Lecture, lab. Prerequisite: instructor approval.

MET 515 Manufacturing Simulation. (3)
spring
Computer simulation of manufacturing operations. Discrete event simulation models range from individual processes to whole factories. Lecture, computer lab experiences.

MET 517 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 or instructor approval.

MET 560 Fundamentals of Security Engineering. (3)
fall
Definitions of threats, fundamentals of design of physical protection systems, computer modeling and analysis of security systems.

MET 571 Waste Minimization and Waste Prevention. (3)
spring
Life cycle analysis, selection of environmentally compatible materials, design of waste minimization equipment and operation, economics of waste minimization and prevention. Prerequisite: ETC 340 or instructor approval.

MET 580 Practicum. (1–12)
not regularly offered

MET 584 Internship. (1–12)
not regularly offered

MET 590 Reading and Conference. (1–12)
not regularly offered

MET 591 Seminar. (1–12)
not regularly offered

MET 592 Research. (1–12)
not regularly offered

MET 593 Applied Project. (1–12)
not regularly offered

MET 594 Conference and Workshop. (1–12)
not regularly offered

MET 595 Continuing Registration. (1)
not regularly offered

MET 598 Special Topics. (1–4)
not regularly offered

MET 599 Thesis. (1–12)
not regularly offered

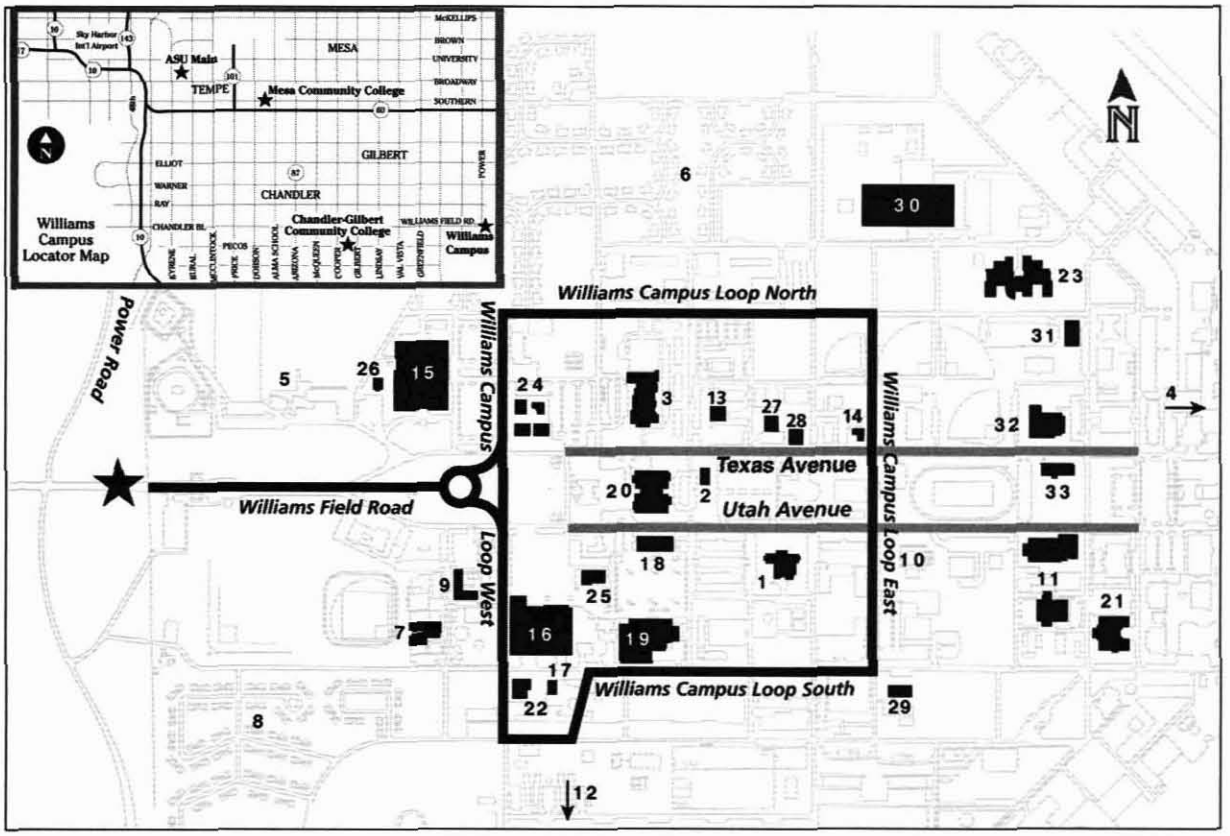
SECURITY ENGINEERING TECHNOLOGY (SET)

See the *Graduate Catalog* for the SET courses.

Preflight instruction

Dave Tevis photo

ASU East Map



WILLIAMS CAMPUS

1 Williams Campus Dining Hall (El Mirage)
2 Williams Campus Housing Office
3 Williams Campus Union **(CU)**
4 Williams Gateway Airport and Flight Line
5 Toka Sticks Clubhouse and Golf Course
6 North Desert Village
7 Child Development Center **(CDCTR)**
8 West Desert Village
9 Administrative Services Building—Security **(ADMIN)**
10 Swimming Pool **(POOL)**
11 Research Training Laboratory
12 South Desert Village
13 Williams Express Copy Services **(COPY)**
14 Williams Campus Post Office **(WCPO)**

CHANDLER-GILBERT COMMUNITY COLLEGE AT WILLIAMS CAMPUS

30 Aviation Technology Center, Embry-Riddle, and University of North Dakota **(ATC)**
31 General Studies Building **(GSB)**
32 Physical Education Center **(PEC)**
33 Science Lab Building **(SLB)**

ASU EAST

15 Health Sciences Center (ASU East Student Health, VA Clinic)
16 Technology Center **(TECH)**
17 Agribusiness Food Science Lab **(AGBFS)**
18 Auditorium **(AUD)**
19 Future Classroom and Lab Building
20 Academic Center Building **(CNTR)**
21 Classroom Building **(CLRB)**
22 TECH II
23 Flight Simulator Building **(SIM)**
24 Morrison School of Agribusiness and Resource Management Complex **(AGB 1–4)**
25 Communication **(COMM2)**
26 Professional Golf Management **(PGM)**
27 American Indian Programs **(AIP)**
28 International Projects Unit **(INTRP)**
29 Photovoltaic Testing Lab **(SOLAR)**

ASU East Directory

For the "ASU Main Directory," see page 522. For the "ASU West Directory," see page 674. For the "ASU Extended Campus Directory," see page 69 .

Organization	Location	Telephone	Web Address
Agribusiness and Resource Management, Morrison School of	CNTR 20	480/727-1585	www.east.asu.edu/msabr
American Indian Programs	AIP	480/727-1161 480/727-1075	www.east.asu.edu/aip
Bookstore	CNTR 102	480-727-1146	www.asu.edu/east/admin/business.htm#Bookstore
Campus Union	CUB	480-727-1098	www.asu.edu/east/cls/union.htm
Cashiering Services	CNTR 81	480-727-1081	www.asu.edu/east/admin/business.htm#CashieringServices
Computer Commons, ASU East		480/727-1184	www.east.asu.edu/infotech/labs
East, College of	CNTR 92	480-727-1515	www.east.asu.edu/college
Applied Psychology, Faculty of			www.east.asu.edu/college/appliedpsych
Business Administration, Faculty of			www.east.asu.edu/college/businessadmin
Elementary Education, Faculty of			www.east.asu.edu/college/elementaryed
Exercise and Wellness, Faculty of			www.east.asu.edu/college
Multimedia Writing and Technical Communication, Faculty of			www.east.asu.edu/college/multimedia
Nutrition, Department of			www.east.asu.edu/college/nutrition
Fitness Center, Williams Campus	WCFC Bldg	480/988-8400	www.asu.edu/east/cls/recreation.html
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
Nutrition, Department of	HSC 1386	480-727-1728	www.east.asu.edu/college/nutrition
OASIS	CNTR Garden Level	480/727-3278	www.east.asu.edu/student/oasis.htm
ASU Sun Cards	—	—	
Office of the Registrar			
Student Business Services		—	
Student Financial Assistance			
Undergraduate Admissions	—	—	
Williams Campus Parking Decals			
Printing and Copy Center, Williams Express	BLDG 210	480/727-1600 480-727-1616	www.valleyofthesun.org/printshop.htm
Provost, *Office of the*	CNTR 30	480/727-1028	
Student Health Services	Veterans	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	www.east.asu.edu/ctas/amt
Electronics and Computer Engineering Technology, Department of	TECH 101	480/727-1137	www.east.asu.edu/ctas/ecet
Information and Management Technology, Department of	TECH 102	480/727-1781	www.east.asu.edu/ctas/imt
Manufacturing and Aeronautical Engineering Technology, Department of	SIM 295	480/727-1584	www.east.asu.edu/ctas/maet

ASU East Faculty and Academic Professionals

A

Abuleyaman, Eltayeb S. 1998 Associate Professor of E ectronics and Computer Engineering Technology, B S , University of Khartoum (Sudan); M.S., Oregon State University, Ph D , University of Arizona

Autore, Donald D. (1959 , Professor En eritus of Technolo_y; B S E , University of Michigan, M S E , Arizona State University

B

Backus, Charles E. 968 , Professor of Electrical Engineering, Campus Chief Execut ve Officer and Provost, ASU East, V ce President, ASU, B S M E., Ohio University, M S , Ph D University of Arizona

Barchilon, Marian G. 1989 , 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

Bergeron, Bette S. 2000 , Professor of Education, B.S Ed , University of Maine, Orono, M S.Ed., Ph.D., Purdue University

Brady, Ward W. (1973 , Professor of Environmental Resources, B S , M.S., Ph.D., Colorado State University

Brock, John H. (1977), Professor of Environmental Resources, 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, ASU East Library Services, Director, ASU East Library Services, 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

Burkink, Tim (1998), Assistant Professor of Agribusiness and Resource Management, B S , M B A , Ph D., Un'versity of Nebraska, Lincoln

C

Carlsen, Paul A. 1978 , Professor Emeritus of Techno ogy, 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 U iversity

Chalquest, Richard R. 1971), Professor Emeritus of Agribusines and Resource Managen ent, B.S., D.V M., Washington State University; M S., Ph D , Cornell University

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

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 , Profess r Emeritus of Technology, B S.M.E., Purdue University, M S E , Arizona State University

Cox, Jerry R. 1984 , Adjunct Associate Professor of Environmental Resources, B S , M S , New Mexico State University; Ph D., University of Wyoming

D

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 Manufacturing and Aeronautical Engineering Technolo y; Chair, Department of Manufacturing and Aeronautical Engineering Technology, B S , M S , University of Wyoming, Ph D., North Dakota State University

DeBano, Leonard F. 1983 , Adjunct Associate Professor of Environmental Resources; B S , Colorado State University, M.S , Utah State University; Ph.D , University of California, Berkeley

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 Techno ogy; 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 Univers ty

F

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

G

Gesell, Laurence E. 1984 , Professor of Aer nautical 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 , Univers ty of Rochester, M.A , Harvard University, Ph D , Massachusetts Institute of Technology

Green, Douglas M. (1990), Associate Professor of Environmenta Resources; 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, B.A , University of the Pacific, M S , Ph D , Purdue University

H

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

Harris, Laverne Abe (1999), Lecturer of Information and Management Technology, B.A., M.Tech , Arizona State Un versity

Hefner, Stephen P. (1973 , Instructional Professional of Agribusiness and Resource Management, Morrison School of Agribusiness and Resource Management; B.S., I linois 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 Co lege, Ed D., Arizona State University

Horowitz, Renee B. 1986 , Professor Emeritus of Informat on and Management Technology, B A , Brooklyn College; M.A , Ph D , University of Colorado

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

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

J

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

Johnson, Randall A. (1984), Adjunct Associate Professor t Environmental Resources; B.S , California State Polytechnic University, Pomona, M A., M S , Ph D , University of Missouri, Columbia

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

Jones, Kathy (1996 , Lecturer of Exercise and Wel ness; B.A , University of California, Berkeley, M S , Ph D , Arizona State University

K

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

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

Keith, Marlow F. 946 , Profess r Emeritus of echnology; B A., M A , Arizona State Univers ty

Kelley, Donald G. 1980 Professor Emeritus of Manufa turing and Aeronautical Engineering Technolo_y; B.S., M S , Ariz na State Un versity

Kigin, Denis J. 1958–6?, 1967 , Professor Em eritus of Technology; Dean Emeritus, Continuing Edu ation and Summer Sessions, B S , Mankato State University, M.S., University of Wisc nsin, St ut Ed D University of Missouri

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

Kisielewski, Robert V. (19 8), Professor Emeritus of Technology, B.S.M.E., M S M E , University of Wisconsin, Madison

Kleemann, Gary L. (1979), Administrative Pr fessional, Academic Programs, Director, E Learning· B A., M.S , San ose State University, Ph D , Arizona State University

L

Lawler, Eugene D. 1967 Professor Emeritus of Technology, B S , Northern State C llege, M.A , Arizona State Un versity

Lestar, Dot J. (199 , Lecturer of Information and Manage ent Technology, B.S , M.Tech , Arizona State Un vers ty

Lindquist, Timothy 1985 Professor of Electronics and Computer Engineering Technology; Cha Department c f Electronics and Computer Engineering Technology, B.S , Purdue University, M S , Ph D , Iowa State University

Lipari, Charles A. 1995), Assistant Professor of Electronics and Con puter Engineering Technology, B S E E , M S E E , Un versity of Southwestern Louis ana, Ph D Louisiana State Un vers ty

Lytle, Robert G. 1972 , Professor Emeritus of Ag r business and Resource Management; B S , Western Kentucky University M S , Arizona State University

M

Macia, Narciso F. (1990), Associate Professor of Electr nics and Computer Eng neering Technology, B S , M.S., University of Texas, Arl n ton; Ph D., Arizona State Un versity

Maddy, Kenneth H. 1980) Profess r Emeritus of Agribusiness and Resource Management, B.S , Pen sylvania State University M S , Univers ty of W sconsin, Madison, Ph D , Pennsy vania State University

Maid, Barry M. (2000 , Professor of Mult media Writing and Technical Communicati n B A Un versity of Wisconsin, Madison, M.A , Un versity of Texas, Austin, Ph D., Univers ty of Massachusetts, Amherst

Maisel, James E. 1985 , Professor Emeritus of Electronics and Compute Engineering Technology, B.Eng.Sci., B E.E., Fenn Col ege; M.S.E.E , Ohio State University

Manfredo, Mark R. 1999 , Assistant Professor of Agribus ness and Resource Management, B S , California State University, Fresno; M.S., New Mex co State Un'vers ty· Ph D , U versity c f Il ino s Urbana

Manore, Melinda M. 984 , Professor of Nutrition B S , Seattle Pac fic Un versity; M S , Un versity c f Oregon; Ph.D., Oregon State University

Marquardt, Raymond A. 1997 , Professor of Agribusiness and Resource Managen ent, Dean Morrison Schoo of Agribusiness and Resource Management: B S , M.S., Colorado State University, Ph.D , Mich an State University

Martin, Rose L. 1990 , Senior Lecturer of Nutrition, B S , University of Illinois, M S., Pennsylvania State University

Matson, John H. 1978 , Associate Professor of Information and Management Technology B S M S , Ill nois State University

Matthews, James B. (1989 , Professor Emeritus of Aeronautical Technology, B S Rose Hulman Inst tute 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 , Associate Professor of Aeronautical Managen ent Technology, Chair, Department of Aeronautical Management Technology, B.S., Purdue University, M.S , Troy State Univers ty; 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 Hea th; B.S., M.S., Saint Louis University, Ph D , Arizona State University

Millard, Bruce R. (1988), Associate Professor of E ectronics and Computer Engineering Technology B A , M S , Washingto State University, Ph D , Arizona State Un versity

Miller, Victor J. (1958 Professor E e tus of Agribusiness and Resource Management B S M S , Ph.D , Unive sity of Illinois

Miller, William H. 1984 Associate Professor of E vironmenta Resources B S , M S Ph D , Washington State University

Minter, Marshall R. Jr. 965 , Professor Emeritus of Technology, B S M E , Purdue University; M S M.E., University of Arizona

Monte, Woodrow 1979) Associate Professor of Nutrition B.S., New Mexico Institute of Min ng and Technol gy: M S., Ph D., Colorado State University

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

Munukutla, Lakshmi V. 1987 , Professor of Electron cs 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 Manufacturing and Aeronautical Engineering Technology B S , M S. Seou National University South Korea , Ph D , Purdue University

O

O'Brien, Marc H. 1997 , Lecturer of Aer nautical Management Technology, B.A Boston Univers ty; M S Indiana State University

Olson, Larry W. 1995 , Assoc ate Professo of Informat on and Management Technology, B S , Bay or Univers ty· Ph D University of Penn ylvania

P

Palmgren, Dale E. (1984), Associate Professor of Manufacturing and Aeronautical 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), Assistant Professor of Agribusiness and Resource Management, B.S , Auburn University; M.S., Ph.D., Purdue University

Pearce, Martha V. (1977), Professor Emeritus 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), Assistant Professor 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 Manufacturing and Aeronautical Engineering Technology, B S , University of Arizona; M S , Stanford University, Ph D , University of Hawaii

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 Manufacturing and Aeronautical Engineering Technology, B Tech., Indian Institute of Technology India , M.S., Ph.D , Georgia Institute of Technol gy

Rasmussen, Robert D. 1949), Professor Emeritus of Agribusiness and Resource Management; B.S., Iowa State University, M S , Washington State University

Reed, William H. (1968 , Professor Emeritus of Manufacturing and Aeronautical 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

Roe, Keith B. 1979), Professor Emerit s of Techno ogy; B.S , Wisconsin State Col ege; M A., L niversity of Michigan

Rogers, Bradley B. 1984 , Associate Profess r of Manufa turing and Aeronautical Engineering Technology, B.S M S Montana State University; Ph D , Arizona State L niversity

Rook, Fern H. 1969 , Professor Emeritus of Technology; B A., University of Colorado; M A., 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 , Associate Professor 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 2000 , Professor of Applied Psychology, B.A University of Utah, M S , Ph D., University of Wisconsin, Madison

Schwalm, David F. 1986 , Associate Professor of English, Dean of East Col ege, Vice Pr vost ASUE; B.A. Carlton College, M S Ph.D , University of Chicag

Seperich, George J. 1976 , Professor of Agribusiness and Resource Management, Associate Dean, Morris n Schc ol f Agribus ness and Res urce Management, B S , Loyola University, Chicago, M.S , Ph.D , Michigan 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

Stanton, Julie V. 996 , Assistant Pr fessor of Agr business and Resource Management, B A Georgetown University Ph D , University of Maryland C l ege Park

Stiles, Philip G. 1969 , Profes or Emer tus c f Agribusiness and Resource Management, B S., University of Arkar sas M S , University of Kentucky, Ph D , M chigan State L n versity

Stone, William J. (1967) Professor of Exerc se and Wellness; B.S , Boston L niversity; M S , Florida State University Ed D Univers ty of Ca fornia, Berkeley

Strawn, Roland S. 1967 , Professor Emeritus of Technology B.S E.E., M S E E , Un versity of I linois; Ph D Arizona State University

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

Swan, Pamela 1994 , Assistant 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

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

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

Welty, Ellen L. (1996 Reference/Instruction Librarian, ASU East L brary Se vices; B.A., University of Wyoming, M L S , Univers ty of Arizona

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

Whysong, Gary L. 1974 Associate Professor of Environmental Resources, B.S , M S Montana State University, Ph D., University of Wyon ing

Wilson, Daniel 1978), Senior Lecturer of Information and Management Techn ogy; B.S., Drexel University, M S E , Ph.D , Arizona State University

Wood, Billy G. (1977) Profess r En eritus of Electronics and Computer Engineering Technolc gy, A B., University of California; B S , Eastern Illi ois University; M S., Univers ty of Arizona

Woodruff, Larry 1998 , Lecturer of Exercise and Wellness, B S., University of Oregon M.S., Western Oregon University

Z

Zeng, Guoliang 1991 , Associate Professor of Electronics and C mputer Engineering Technology; B S , Chengdu Telecommunication Institute China), M S , University of California Sar Diego, M N S , Ph D Arizona State University

ASU East Administrative Personnel

Academic Administration

Campus Chief Executive Off cer and Provost, ASU East;
Vice President, ASU ..... Char es E. Backus
Vice Provost Academ c Programs ..... Dav d E Schwa m
Dean Student Affairs. ..... Gary L. McGrath
Director, Academic Services ..... C Vinette W l iams
Director, Adm nistrat've Serv ces ..... Terry C. Isaacson
Director, American nd an Programs ..... Ph l p J. Huebner
Director, Deve opment ..... Judith L. Heas ey
Director, Information Technology ..... Kat L. We ngartner
Interim D rector, nstitut ona Advancement ..... C. Vinette W l ams
Director, Library Services ..... Charles W. Brownson
Director, Plann ng and Budget ..... She la L. Ain ay
Director, Research and Sponsored Projects ..... Jean N. Humphr es
Marley Foundation Chair in Consumer Food Market ng ..... Cl fford J. Shultz
Coord nator, Susta nable Technolog es, Agribusiness,
and Resources Center ..... John H. Brock

College of Technology and Applied Sciences

Dean, Col ege of Techno ogy and App ied Sc ences ..... A bert L McHenry
Assoc ate Dean, Co lege of Techno ogy and Appl ed Sciences ..... Lakshm V Munukutla
Assistant Dean Col ege of Technology and Appl ed Sc ences ..... Da e E. Palmgren
Cha r, Department of Aeronaut ca Management Technology ..... Wi l am K. McCurry
Cha r, Department of Electronics
and Computer Engineer ng Technology ..... T mothy E. L ndqu st
Cha r, Department of Information and Management Technology ..... Thomas E. Schi dgen
Cha r, Department of Manufactur ng
and Aeronaut ca Eng neering Technology ..... Scott G Dan elson
Project D rector, nternat'ona Projects Institute ..... Gary M Grossman

East College

Dean, East Co lege ..... Dav d E. Schwa m
Chair, Department of Nutr t on ..... Linda A. Vaughan
Head, Faculty of App ied Psycho ogy ..... Roger W. Schvaneve dt
Head, Faculty of Business Adm n strat on ..... Roger W. Hutt
Head, Faculty of Elementary Educat'on ..... Bette S. Bergeron
Head Faculty of Exercise and We lness ..... W l am J Stone
Head Faculty of Mult med a Wr ting and Technical Communication ..... Barry M. Ma d

Morrison School of Agribusiness and Resource Management

Dean Morrison School of Agribusiness
and Resource Management ..... Raymond A Marquardt
Associate Dean, Morr son Schoo of Agribus ness
and Resource Management ..... George J Seper ch

ASU West

Elaine P. Maimon, Ph.D., Campus Chief Executive Officer and Provost, ASU West; Vice President, ASU

www.west.asu.edu

Andrew Kirby (right), faculty advisor and professor of Social and Behavioral Sciences, assists a student. Dave Tevis photo

ASU West, a growing anchor campus of Arizona State University, serves diverse students who balance academics with the multiple demands of careers, family, and community service. More than 5,300 commuting students are enrolled in junior, senior, and graduate-level courses leading to 29 bachelor's degrees, nine master's degrees, and eight professional certificates. Starting in fall 2001, ASU West admits freshmen for the first time, beginning the transition to a full, four-year learning environment.

Through the award-winning University-College Center, some students take community college courses necessary for university transfer on the ASU West campus. Academic advising, child care, and evening tutoring for children of students are just a few examples of innovative services that help families achieve their educational goals. ASU West students enjoy a friendly, small-campus atmosphere while benefitting from the resources and expertise of a research-based, nationally acclaimed, PAC-10 university.

Academic programs are linked directly to community needs, providing relevant, applied learning opportunities, such as internships. Courses are offered through the Colleges of Arts and Sciences, Education, and Human Services and through the Division of Collaborative Programs and the School of Management.

ASU West offers many on-campus services and facilities, including a multimedia resource library, state-of-the-art computer classrooms and labs, tutoring services, bookstore, cafeteria, credit union, fitness center, recreational facilities, 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 Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools, 30 North LaSalle St., 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 the AACSB—the International Association for Management Education. The

ASU West Baccalaureate Degrees and Majors

Major	Degree	Concentration	Administered By
Accountancy	B.S.		School of Management
Administration of Justice	B.S.		College of Human Services
American Studies	B.A.	Emphases: American cultures, American lives, American systems, writing	College of Arts and Sciences
Applied Science	B.A.S.	All minors available at ASU West, individualized concentration	Division of Collaborative Programs
Communication Studies	B.A., B.S.	Emphases: communication and culture, communication and organizations; communication and relationships, rhetoric, philosophy, and media studies	College of Human Services
Elementary Education	B.A.E.	Bilingual education, early childhood education, English as a second language Option: middle school education	College of Education
English	B.A.		College of Arts and Sciences
Global Business	B.S.	Financial management, human resources management, information systems management, international studies, marketing	School of Management
History	B.A.		College of Arts and Sciences
Integrative Studies	B.A.	All minors available at ASU West, individualized concentration	College of Arts and Sciences
Interdisciplinary Arts and Performance	B.A.	Media, music, performance studies, theater performance, visual art	College of Arts and Sciences
Life Sciences	B.S.	Emphases: cell biology and physiology, ecology and organismal biology, human biology and environment	College of Arts and Sciences
Nursing	B S N		College of Nursing ASU Main)
Politics	B.A., B.S.		College of Arts and Sciences
Psychology	B A . B S		College of Arts and Sciences
Recreation and Tourism Management	B.S.		College of Human Services
Secondary Education	B.A E.	Academic specializations bio ogical sciences, English history, mathematics, social studies Option middle school education	College of Education
Social and Behavioral Sciences	B.A., B.S.	Emphases: interdisciplinary behavioral sciences, interdisciplinary social sciences	College of Arts and Sciences
Social Work	B.S.W		College of Human Services
Sociology	B.A., B S	—	College of Arts and Sciences
Spanish	B A		College of Arts and Sciences
Special Education	B.A E		College of Education
Women's Studies	B.A., B S.		College of Arts and Sciences

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, 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 2002. See "Academic Accreditation at ASU West," page 694.

ACADEMIC ORGANIZATION AND ADMINISTRATION

As chief operating and academic officer of ASU West, the vice president and provost provides executive leadership for the continuing development and management of the campus and reports directly to the president of Arizona State University The vice president and 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 and a Division of Collaborative Programs administered by deans. These academic units develop and implement the teaching, research, and service programs of the institution, aided by the ASU West Fletcher Library and other services.

ASU West Graduate Degrees and Majors

Major	Degree	Concentration	Administered By
Business Administration	M.B.A		School of Management
Communication Studies	M A.	—	College of Human Services
Criminal Justice	M.A		College of Human Services
Educational Administration and Supervision	M.Ed.		College of Education
Elementary Education	M Ed	Bilingual education, educational media and computers, ESL education, reading	College of Education
Interdisciplinary Studies	M.A.		College of Arts and Sciences
Secondary Education	M Ed	Educationa media and computers	College of Education
Social Work	M.S.W.		College of Human Services
Special Education	M Ed	Infants and young children	College of Education

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 Administrative Personnel," page 682, and "Academic Organization," page 8

ADMISSION AND ADVISING

Admission

Nondegree Students. Nondegree students may take courses at ASU West according to the special provisions under "Admission of Undergraduate Nondegree Applicants," page 60.

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 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

ADMISS ON SERVICES
UN VERSITY CENTER BU LDING 120
ARIZONA STATE UN VERS TY 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 Admissions and Records 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 certain requirements (e.g , the minimum number of upper division semester hours to graduate differ between ASU West and ASU Main Students should therefore contact an academic advisor at West campus before relocating to ASU West

Application of Course Credit. All courses completed on any ASU campus may fulfill the 120 semester hour requirement for graduation with a baccalaureate degree. Every candidate for the baccalaureate degree is required to earn a minimum of 30 semester hours in resident credit courses at the ASU campus from which the student will graduate. Some degree programs have specific requirements that must be completed in the department of the major or through another department at the resident campus. The application of courses to the degree program is determined by the appropriate faculty member or academic advisor 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 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 602/543-8217, or visit Transition and Outreach Services 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 669, "ASU West Graduate Degrees and Majors" table, on this page, and "ASU West Certificates" table, page 672.

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 The following academic specializations for the B.A.E degree in Secondary Education require course work in the subject matter area not currently available at ASU West (but offered at ASU Main): business education chemistry, family resources and human development, physical education, physics, political science, and Spanish.

For more information on ASU West degree requirements, see the *ASU West 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; for the complete list, see the "ASU West Certificates" table, page 672, and the "ASU West Minors" table, page 671. 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 455.

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*.

Library Services

The ASU West Library provides resources that support the curriculum of the West Campus with a collection of 315,000 volumes, 1.4 million microforms, 7,500 videos, 15,000 slides, 170 electronic databases and more than 5,000 serial titles including 2,800 electronic full-text journals. Approximately 53% of electronic databases are available to ASU registered users from home computers.

The library is open seven days a week to meet the informational needs of the campus community. 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.

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. For library hours and information, call 602 543 5717.

ASU EXTENDED CAMPUS

The College of Extended Education was created in 1990 to extend the resources of ASU throughout Maricopa County, the state, and the region. 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.

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 683, or access the Web site at www.asu.edu/xed.

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	Ethnic Studies Program
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
Politics	Department of Social and Behavioral Sciences
Prelaw	College of Human Services
Psychology	Department of Social and Behavioral Sciences
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

ASU West Certificates

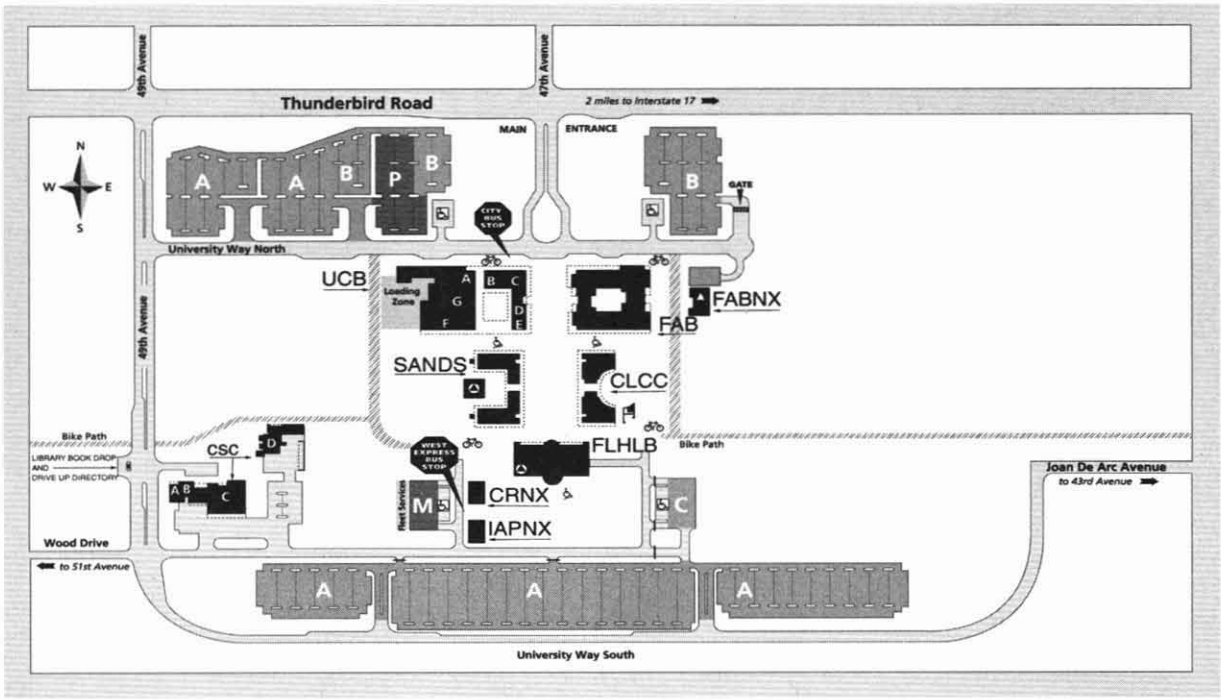
Certificate	Administered By
Accountancy, Postbaccalaureate Certificate in	School of Management
Communication and Human Relations, Postbaccalaureate Certificate in	College of Human Services
Ethnic Studies Certificate	College of Arts and Sciences
Film and Video Studies Certificate	College of Arts and Sciences
Gerontology Certificate	College of Human Services
Professional Accountancy, Postbaccalaureate Certificate in	School of Management
Women's Studies Certificate	Women's Studies Program
Writing Certificate	Department of American Studies

The area's pleasant climate affords university groups, such as this ASU West Women's Studies class, the opportunity to meet outdoors.

Dave Tevis photo

ASU West Map

ASU West Map



University Center Building (UCB)
Admission Services
Arizona State Savings and Credit Union
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
Parking Office
Registration Services
Second Stage West Theatre
Student Affairs Administration
Student Health Services
Student Life
Student Support Services Program
Transition and Outreach Services
Tutoring Services
University-College Center
Veteran Services
Wellness/Fitness Center
Women's Resource Center

Faculty/Administration Building (FAB)
Academic Affairs
Academic/Faculty Offices
Basement Classrooms
College of Arts and Sciences
Education
Human Services
Copy Center
Information Technology
Instructional Technology Lab
Information Desk
Institutional Advancement
Office of the Provost
School of Management

FAB Annex (FABNX)
Administrative Affairs
Human Resources

Classroom Lab/Computer Classroom Building (CLCC)

Fletcher Library (FLHLB)
Center for Writing Across the Curriculum
Technopolis

Sands Classroom Building (SANDS)
Copy Express
Kiva Lecture Hall
Sand Trap Snack Bar

Interdisciplinary Arts Annex (IAPNX)

Classroom Annex (CRNX)

Central Services Complex (CSC)

Map Symbols Legend

Disabled Parking

Disabled Decal Parking

Metered Parking
(25 cents per 15 minutes)

Visitor Parking
($1.00 exit fee; 24 hrs)

Decal Parking
(Students, faculty and staff only)

Faculty/Staff Decal Parking
(7 a.m.–5:30 p.m., student decal parking after 5:30 p.m.)

Faculty/Staff Decal Parking
(24 hrs/day)

Bicycle Racks

Accessible Ramp

Parking regulations are enforced at all times.
Decals are required on campus 7 a.m.–11 p.m.
Meters are enforced from 7 a.m.–10 p.m..

ASU West Directory

For the "ASU Main Directory," see page 522. For the "ASU East Directory," see page 662. For the "ASU Extended Campus Directory," see page 691

Organization	Location	Telephone	Web Address
Academic Units (Administrative and Faculty Offices			
Arts and Sciences, College of	FAB N201	602/543-6000	www.west.asu.edu/coas
American Studies, Department of	FAB N220B	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/asweb/index.html
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/mas
Social and Behavioral Sciences, Department of	FAB N250	602/543-6058	www.west.asu.edu/socsa
Women's Studies Program	FAB N291	602/543-3300	www.west.asu.edu/wsteam
Collaborative Programs, Division of	UCB 201	602/543-4600	www.west asu edu dcp
Bachelor of Applied Science Program	UCB 201	602/543-4BAS	www west.asu edu bas
Barrett Honors College	UCB 201	602/543-4503	www.asu.edu honors
Native American Programs	UCB 201	602/543-8138	www west.asu.edu stuaffairs nat veamprograms htm
Research Consulting Center	UCB 201	602/543 3410	www west asu.edu rcc ab ndex.htm
Transition and Outreach Services	UCB 201	602/543-8217	www west.asu edu tos
University-College Center	UCB 201	602/543-4222	www west.asu edu ucc
Writing Across the Curriculum, Center for	FLHLB LL2	602/543 6151	www west.asu edu cwac
Education, College of	FAB S210A	602/543 6300	www.west asu.edu/coe
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 S170 2	602/543-6642	www.west asu edu chs GRN
Nursing (ASU Main Program	FAB N290A-2	602/543 6605	www west asu.edu chs nur
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
Library, Fletcher	FLHLB	602/543-5717	www.west.asu.edu/ brary
Management School of	FAB N101	602/543 6200	www west.asu edu som
Accountancy Program	FAB S190	602/543-6275	www west asu edu som acct
Master of Business Administration Program	FAB N151	602/543 6201	www west asu.edu som MBA
Undergraduate Global Business Program	FAB N101	602/543 6200	www west asu.edu som globa
Others			
Admissions Services	UCB 120	602/543 8203	www west.asu edu asuw2/admcosts
Associated Students of ASU West	UCB 221	602/543-8186	www.west.asu edu/asasuw
Bookstore	UCB 140	602/543-6800	www.west asu edu adaff auxs book html
Career Services and Personal Counseling Center	UCB 320	602/543 8124	www west.asu.edu stuaffairs/cspc
Disability Resource Center TDD	UCB 130	602/543 8145 602/543 4327	www west.asu edu stuaffairs drc
Financial Services	UCB 120	602/543 8178	www.west.asu.edu stuaffairs fa/safs.html
Graduate Studies	FAB S 301	602/543-4567	www west.asu.edu graduate

Organizat on	Locat on	Telephone	Web Address
Information Desk	FAB Lobby	602/543-5500	www.west.asu.edu/adaff/auxs nfodsk.html
Mu t cultural Student Serv ces	UCB 220	602/543 8148	www west asu edu stuaffa rs multicu tura
Parking Services (Decals, Appea s)	UCB 105	602/543-7275	www.west.asu.edu/adaff/auxs/park ng
Resıdency C assıf catıon	UCB 120	602/543 8203	www.asu.edu reg strar res dency
Student Employment	UCB 120	602/543 8178	www west asu edu/stuaffa rs fa/stdemply htm
Student Hea th Serv ces	UCB 170	602/543-8019	www.west.asu.edu stuaffa rs studenthealth
Student Lıfe	UCB 221	602/543-8200	www.west.asu.edu/stuaffairs/studentlife
Student Support Serv ces Program	UCB 220	602/543 8121	www.west.asu.edu stuaffa rs sasssp.htm
Testing Services	UCB 120	602/543 8136	www.west.asu.edu/stuaffa rs/testing
Trans t on and Outreach Services (General Adv s ng)	UCB 201	602/543 8217	www west asu edu tos
Tutoring Services	UCB 322	602/543-8068	www.west.asu.edu stuaffa rs/multicultural/programs tutor ng
Veteran Student Serv ces	UCB 120	602/543 8220	www.west asu edu stuaffa rs sava html
Vice Pres dent/Provost	FAB N303	602/543-7000	—
Vıce Provost, Academıc Affa rs	FAB N301	602/543 4500	www.west asu edu asuw academ c aa/org.htm
Women's Studıes Resource Center	UCB 323	602/543 3421	www west.asu.edu/wsteam/resource htm

ASU West Faculty and Academic Professionals

A

Abramson, Marianne 1999 , Visiting Assistant Professor of Psychology; B A., Northern Arizona University, M.A , Ph D., Arizona State University

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

Aguiñaga, Jose 1999 Assistant Librarian; B A., University of San Diego M L S., University of Arizona

Aleshire, Peter 1993 , Senior Lecturer of Professional Writing; B.A , M A , Stanford University

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, Akua Duku (1999 , Visiting Associate Professor 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), Visiting 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; B A., M.A., San Diego State University; Ph.D , Claremont Graduate School

Ávalos, Manuel 990 , Associate Professor of Political Science 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 A. 1999), Associate Professor of Information Management Systems, B.S., McGil 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, B S M A , Ph D , University of Nebraska, Lincoln

Berman, Tressa 1995 , Assistant Professor of Anthropology; B A , San Francisco State University, M A , University of Colorado, Boulder; Ph.D , University of California, Los Angeles

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

Bonakdarian, Mansour 1999 , Visiting Assistant Professor of American Studies; B.A , M.A , Ph D., University of Iowa

Brawley, E. Allan 1992 , Professor of Social Work; Certificate of Social Work, University of Strathclyde United Kingdom); D S.W., University of Pennsylvania

Bredbenner, Candice D. 1990 , Associate Professor of American History; Cochair, Department of American Studies, B.A , Russell Sage College; M.A., Ph D University of Virginia

Brett, Joan F. (1999), Associate Professor of Marketing; 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; Cochair, Department of American Studies; B.A., Eastern Kentucky University, M Ed., Ph.D University of Louisville

Brodar, Valerie A. 1999), Visiting Assistant Professor of Interdisciplinary Arts and Performance, B A , Carnegie Mellon University, M.F A., School of the Art Institute of Chicago, M.F A , Ohio State University

Bryn, Saundra L. 1994), Assistant Professor of Curriculum and Instruction; B S , Minot State College; M.A., Ed.D., Northern Arizona University

Burleson, Mary H. 1997 , Assistant Professor of Psychology, B A , M S New Mexico State University, Ph D , Arizona State University

Buss, Ray R. (1990), Associate Professor of Educational Psychology· Assistant Dean, College of Education; B S M S , Ph D , University of Wisconsin, Madison

Byam, L. Dale (1999 , Visiting Assistant Professor of Interdisciplinary Arts and Performance, B A , Concordia University Canada · M.A. Ph D , New York University

C

Cardelle-Elawar, Maria 1987 , Associate 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, James (1998), Lecturer Schoo of Management, B.S., M B A., Ph D., Arizona State University

Carey, Jane M. (1988 , Associate Professor of Management Information Systems, B S , M B.A , Eastern Illinois University, Ph D University of Mississippi

Carlile, Barbara J. (1993 , Lecturer of Education Coordinator, Field Placement for Education, B A., Immaculate Heart College; M Ed , Arizona State University; Ed D., Northern Arizona University

Carter, Wendy 1997 , Assistant Professor of Sociology B.A , Stanford University; M.S , Carnegie Mellon University, M S , Ph D., University of Wisconsin, Madison

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

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 , Assistant Professor of Technology and Education; B.A Denison University; M.Ed., Boston University, Ph.D , Arizona State University

Cleland, Jo Ann V. (1991), Associate Professor of Reading Language Arts; B A , Saint Olaf College, M A , Ed.D., Northern Arizona University

Coles, Jerilyn W. 1994) Assistant Professor of Management, B S Brigham Young University, Ph.D., University of Utah

Collins, Kathleen (1997), Assistant Librarian, B A , University of Maine, Farmington M L I.S., Dalhousie University Canada

Collins-Chobanian, Shari C. (1994 , Associate Professor of Philosophy; B.A., Colorado State University, M A Ph D., Washington University

Corrigan, John A. 1992 Professor of American Studies and Religious Studies, Director, Religious Studies Program, B A University of Dayton, M A , Miami University, Ph D., University of Chicago

Costantino, James (1998), Lecturer of Accountancy, B S , M Acc., Arizona State University, M.A , University of Southern California

Cuádraz, Gloria H. (1994) Assistant Professor of American Studies, Director, Ethnic Studies Program, B.A , University of California, Santa Cruz M A , Ph.D., University of California, Berkeley

Cutrer, Emily F. 1990 , Associate Professor of American Studies; Dean, Division of Collaborative Programs, Interim Dean of Students; B A , M A Ph D., University of Texas, Austin

Cutrer, Thomas W. 1992), Professor of American Studies, B A , M A , Louisiana State University, Ph D , University of Texas, Austin

D

D'Angelo, Barbara 1999), Assistant Librarian B A , Emmanuel College, M S , University of Illinois Urbana Champaign

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 for Academic Programs and Graduate Studies B A., San Jose State University, M A , Ph D , University of Iowa

Di Mare, Lesley 1992 , Associate Professor of Communication Studies, Chair, Department 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

Duncan, William A. 1991), Associate Professor of Accountancy; Director, Accountancy Program; B S., Portland State University, Ph D , University of Texas, Austin

E

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

Erfani, Julie A. Murphy (1989 , Associate Professor of Political Science; B.A., Knox College, M A , Ph D , University of Minnesota Twin Cities

F

Farest, Cynthia A. 1994 Assistant Professor of Reading Education; B.S , University of Texas, Austin, M.Ed , Houston Baptist University; Ph.D , University of Texas, Austin

farrelly, deg 1991 , Associate Librarian, B A , Illinois State University; M L S , Rutgers, The State University of New Jersey

Fedock, Patricia 1993), Assistant Professor of Science Education; B A , M A , Ph D , Arizona State University

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, Licencé en Economie, Istanbul University Turkey ; Ph.D , Northwestern University

Fitzpatrick, Tanya R. 2000 , Associate Professor 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

G

Gallegos, Bee 1984 Associate L brarian B S Uni ersity f North Alabama, M.L.S , Geor e Peabody College for Teach ers

Garcia, Mildred 1997), Profess r f Sc c al and Behavior l Sciences; Vice Provost for Academic Personnel; Associate Direct r, Hispan c Research Center; B S , Bernard M Baruch College· M A , New Yo k Ui ersity M A., Ed D., C un b a University

Garrett, Judith N. 1996 , Ass stai t Professor t Early Childho d Educati n/Specia Education, B S State U n versity of New York Fredc nia, M A , U niversity of Tennessee, Ki oxville Ph D George Mason U n vers ty

Georges-Abeyie, Daniel 1992) Profess r of Administrat'on c f Justice; B.A., Hope College· M A., U iversi'y of C nnecticut Ph.D , Syracuse University

Gilkeson, John S. 991), Assoc ate Professor t History, A B., Amherst Col eoe, M A Universi'y of Oklal or a Ph D Br wn Un versity

Gitelson, Richard (1994 , Pr fessor of R creation and Tourism Managen ent Chair, Department of Recreati n and Tourism Mana_gement; B A M A T M S , U n ve sity f N rtl Carol na, Chapel Hill, Ph D Texas A&M U versity

Glass, Ronald D. 1996 , Ass stai t Pr fes or of Profess c nal Co e; B A , Harvard Cc le e, M A , Ph D , Stanfcrd niversit · Ed M Harva d U ni ersity C Phil , Univers ty of Cal fornia, Berkeley

Gonzalez-Jensen, Margaret 1994 Assoc ate Profe sor f Bilin ua Edu ation· B A Our Lady f the Lake Univers ty, M A Ed D , Texas A&M Unive s'ty

Gopalakrishnan, Mohan 1998 As ociate Pr fessor of Operati s P c duction Management; B E , Co le e c f Er g neerin ndia M S , Ph D University of Alaban a Tu cal osa

Graves, Joseph L 1994 , Pr fessor of Evo uti nary Biology, A.B , Oberl n Col ege Ph D , Wayne State U niversity

Greenhut, John G. 1989 , Ass c ate P c fessor f Finance, Director Underg aduate Global Busi ess Progran B A , Ph.D. Texas A&M U iversity

Greenstein, Marilyn 20 0 Associate Professor of Accountancy; B.B A., U niversity f Hou ton Ph.D , Temp e U n vers ty

Gregg, Dawn G. 2000 Visitin Ass stant P ofessor of nformatio Systems, B S , U niversity c f Ca ifo r ia Irvine M B.A., Arizona State Univer ity West M.S Arizc na State University

Griffin, Marie 1997 , Assistant Professor f Adi inistratic n f Justice; B.S., Santa Clara Univers ty, Ph.D , Arizc na State University

Grober, Matthew S. 1995 , A so iate P ofessor of Endocr n logy, B S California State, L n_ Beach, Ph D , U iversity of Californ a L s A geles

Gruber, Diane 1995 , Lecturer of Con munic ation Studies; B.A , Rutgers, The State University of New Jersey, M A Purdue U n vers ty

Gutierres, Sara E. 1990 , Asso ate Profess r of Psych lo y B S M A Ph D Arizona State U versity

H

Haarr, Robin N. 1994 , Associate Professor of Administration of Justice B S State University of New Y rk, Brockport, M S , Ph D M chigan State U niversity

Haas, Nancy S. 1986 Assoc ate Professor of Curricu ui and Instruction, B A M Ed Ph D Arizona State University

Haasnoot, Richard 20), Le turer f Marketino, B.A , Pennsylvan a State University

Haladyna, Thomas M. 986 , Pr fessor of Educational Psych logy, B.S , Illinois State U versity M.A , San Jose State niversity Ph D , Ariz na State University

Harken, Henry R. Jr. 1986 , Associate Librarian, B A Hofstra Un'vers ty; M.S.L.S., ong Is and University

Harris, Kathleen C. 199) Professor of Specia Edu ation; B.A , M Ed , Rutgers The State Univers ty of New Jersey Ph D Temple Uni ers ty

Hattenhauer, Darryl (1988 , Assc ciate Professor of A erican Literature; B.A , M A Califc rn a State University; Ph.D , University of Minne ota Tw Cities

Hay, Victoria 1993 Senior Lecturer of Writin_, B.A., Un versity of Arizona M A , Ph D Ar zona State Univer ity

Hayden, Mary 1998 Lecturer of Management, B A , M.B.A , Arizona State University

Hess, Robert K. 1990 Associate Prc fe sor f Measurement and Eva uatic n B A., M Ed., University of Ge rgia, Ph D., U niversity of South Carolina

Hughes, Kimberly 994 Assistant Professor f Genetics; B.A , Rice Universit ; M.S., Ph.D., University c f Chicag

Hultsman, John (199)), Profess > of Recreati > and Tourism Managen er t Director, Partnership for Community Development, Col ege of Hu a Services, B.G.S., University f Kansas, M.S., Universit of Miss ur Re D Indiana Univer ty, B oomington

Hultsman, Wendy Z. (1990) Associate Professor of Recreation and T urism Management· B S.E., State niversity of New York, Cortland M S , Ind ana U niversity Bloomington Ph D Pen sy vania State U niversity

Hyman, Batya (1995 , Ass stant Professor of Social Work B A Barnard Colle_e, M S W , Bost n University; Ph D. Brandeis Un versity

I

Irvin, Glenn W. 1997 , Prc fessor of English, Vice Prov st for Acaden ic Affairs, B.A , M.A , Ph D., Ar zona State Univers ty

Irwin, Leslie H. 199 , Assistant Pr fessor of Professic nal Education Core; B.S., Univers ty c f Wisc nsin Superic r, B.Ed M Ed., University of Ottawa Canada , Ed.D , Bri_ham Youn Universi'y

Isbell, Dennis 199 Assoc ate Librarian· B S , M A , Northern Arizona U niversity, M L S U n vers ty of Arizona

J

Jacquette, Barbara L. 199(Senior Lecturer of Curriculum and I struction; B S., Corne Univers'ty, M.A , Ade phi University Ph D Arizona State U n versity

Johnson, Carolyn R. 995 , Associate Librari n, B A , Montclair State Co le e, M S L S U niversity of I linois; M B A , Univers ty of M nnesota

Jones, Robert W. 1994 , Assoc ate Pr fessor of Collaborative Programs, Director, Center for Writing Across the Curriculum, B S , M.A , Middle Tennessee State University, Ph D., Miami Univers ty

K

Kammerlocher, Lisa (1988), Associate Librarian; B S , M.L.S., University of Oklahoma

Kassing, Jeffrey W. 1998 , Assistant Professor of Commun cat on Studies, B A William Jewell College; M.A , Murray State University; Ph.D., Kent State University

Katz, Charles 199), Assistant Professor of Administration of Justice; B.S., Truman State University; M A., Ph.D , University of Nebraska, Omaha

Keil, Thomas J. 1999 , Professor of Sociology, Dean, College of Arts and Sciences, 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; B S , M S , Arizona State University; Ed.D., University of Georgia

Kennedy, Jeffery T. 2000 , Instructor of Music, 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)

Kline, Elliot (1993 , Lecturer of Management; B A., M B.A., Ph D., University of Colorado

Knopf, Richard C. (1986), Professor of Recreation and Tourism Management; B S., M.S , Ph D University of Michigan

Koptiuch, Kristin 1992) Associate Professor of Anthropo ogy; B.A., State University of New York Binghamton; M A., Ph.D., University of Texas Austin

Kostelnik, Joyce 1997 , Assistant Professor of Reading; B S , M Ed , Ph.D , University of North Texas

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 Soc al Work, B.A , University of Chicago, M S W., Ph.D., Tulane University

Leikman, Shannon L. (2000 Assistant Professor of Accountancy; B.S , Western Oregon State College, M B A , Oregon State University; Ph D , Oklahoma State University

Lentz, Daniel (1991), Asso iate Professor of Music Theory and Composition, B.A., Saint Vincent College; M.F.A., Ohio University, Athens

Lerman, Richard (1995), Associate Professor of Media Arts; B A., M F A , Brandeis University

Levy, Emanuel 1990), Professor of Sociology, B A , M A , Tel Aviv University Israel , M Ph , Ph D Co umbia Univers ty

Luken, Paul C. 1993 Senior Lecturer of Sociology B.A., Quincy Co lege, M.A., Ph.D., Ohio State University

M

Maimon, Elaine P. 1996 , Professor of English; Campus Chief Executive Officer and Provost, ASU West, Vice President, ASU; B A., M A., Ph.D , University of Pennsylvania

Malian, Ida M. 1990), Professor of Special Education· B.A , Oakland Un versity, M A , Ph D , University of Michigan

McCabe, James 2000 , Visiting 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

Medville, Karen K. 1995 , Assistant Research Scientist in Life Sciences, B A., Colorado College; M S , Colorado State University

Mengesha, Astair Gebre Mariam 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

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), Assistant 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 Sc ences, B S , Saint Vincent Co lege, M S , North Carolina State University, Raleigh, M.A , Ph.D , University of Texas, Austin

Mizzi, Philip J. 1988), Associate Professor of Economics; B A., R ckford College Ph D , Texas A&M University

Mohan, Srimathy (1999 , Visiting Assistant Professor of Operations Production Management, B S , M S , University of Alabama, Tuscaloosa M S , Massachusetts Institute of Technology, Ph.D , Un versity of Montrea Canada

Montano, Henry 2000 , Instructor of Social Work, B A., Ca ifornia 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

Moore, Harold E. Jr. 1990 , Lecturer of Administration of Justice, B A., J D., University of Denver

Morris, Maureen 1999 , Assistant Librarian; B A., M.L I.S., University of Western Ontario Canada)

Morris, Richard (1999), Associate Professor of Communication Stud es, B A., San J se State Univers ty; M A. Ph.D , University of Wisconsin, Madison

Moulton, Ian F. 1995 Assistant 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 , Corne l University

Muller, Barbara J. (1991), Sen or Lecturer of Accountancy· B S., M B A. Arizona State University

Myers, Marilyn 1987 , Associate Librarian, Interim Dean, ASU West Library; B.A., M A., Kansas State University, M S , University of Illin is

N

Nadesan, Majia H. 1994), Associate Professor of Communication Studies; B.A , M A., San Diego State University, Ph D , Purdue University

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, B.A , University of Denver, M A., Ph.D., University of Utah

Náñez, José E. Sr. 1988 Associate Professor of Psychology, B.A , M A , California State University; Ph.D., University of Minnesota, Twin Cities

Nevin, Ann (1991 , Professor of Special Education, B A , Westminster College; M.Ed., University of Vermont; Ph.D , University of Minnesota, Twin Cities

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

O'Malley, Mary (2000), Lecturer of Education, B A Indiana University, Bloomington; M Ed , Arizona State University West

Olander, George A. (2000), Lecturer of Finance, B S , Xavier University, M B.A , Pepperdine University, D B A , United States International University

P

Painter, Suzanne R. (1995 , Assistant 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

Pecuch Herrero, Marta 1994 , Assistant Professor of Mathematics; M.S., Ph.D., University of Chicago

Perry, Eleanor A. (1996 , Assistant Professor of Educational Administration, 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 Systems Ecology; Chair, Department of Life Sciences; B A., Amherst College; M.A., Ph.D , University of California, Los Angeles

Pulido, Alberto L. 1993 , Associate Professor of American Studies, Associate Vice Provost for Research and Faculty Development, B A , University of California, San Diego M A Ph D , University of Notre Dame

R

Ragle, Gael L. 1988 , Senior Lecturer of Educational Psychology, B.S.Ed., M.A.Ed., Northern Arizona University, Ed D , Arizona State University

Ramsey, R. Eric 1994 , Associate Professor of Communication Studies, B A , Rutgers, The State University of New Jersey, M.A , Ph D , Purdue University

Reese, Ruth (1988), Senior Lecturer of Educational Psychology, B.S , University of Wisconsin, Madison, M S , Ph D , University of Wisconsin, Milwaukee

Renne, Dianne (2000), Lecturer of 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), Assistant 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

Ryan, Joseph M. (1995), Professor of Education and Collaborative Programs, 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

Saffo, Mary Beth 1994 , Professor of Physiology, B A , University of California, Santa Cruz; Ph.D., Stanford University

Schmidtke, Paul C. 1998 Senior Lecturer of Integrative Studies, B S , Rose Hulman Institute of Technology, Ph D , Ohio State University

Schuett, Gordon W. 1995 , Assistant Professor of Integrative Biology; B A., University of Toledo M S Central Michigan University; Ph.D , University of Wyoming

Searle, Mark S. 1995 , Professor of Recreation and Tourism Management Dean College of Human Services; 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

Shirreffs, Janet H. 1977 Professor of Recreation and Tourism Management, Director, Gerontology Program, 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

Slotnick, Susan A. (1998 , Assistant Professor of Operations Production Management A B Brandeis University, M.S., Carnegie Mellon University M A M Phil , Ph D. Columbia University

Solovey, Mark (1996) Assistant Professor of History and Philosophy of Science, B A , Rollins College, M.A , University of Wisconsin, Madison

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. (1987 , 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

Toth, Stephen A. 2000 , Visiting Assistant Professor of History; B A , B S , University of Nebraska at Omaha, M A Arizona State University, Ph D Indiana University

V

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

Vicedo, Marga 1992 Associate Professor of Philosophy, B A M A , Ph D , University of Valencia (Spain

Vickrey, Don W. 1992 , Professor of Accountancy, B.B.A., University of Houston· M B.A , Ph.D., University of Texas, Austin

Villarreal, Mary Ann 2000), Lecturer of History B A , Mount Holyoke College

W

Waldman, David A. (1995 , Professor of Management, B A., University of Kentucky, M S , Ph D , Colorado State University

Waldron, Vincent R. (1992 Associate 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; Chair, Department of Administration of Justice, B.A , University of Omaha, M A , University of Nebraska, Omaha, Ph D , Iowa State University

Wertheimer, Eric H. R. (1995 , Assistant Professor of American Literature; B.A , Haverford College, M.A., Ph D., University of Pennsylvania

Wetzel, Keith 1991), Associate Professor of Educational Technology, B.A , Greenville College, M A , Goddard College, M.A., Ph.D., University of Oregon

Williams, Jane (1997 , Assistant Professor of Special Education; B.A., Wittenberg University; M A., University of Iowa; Ph.D., University of Maryland

Wilson, Denward J. (1989 , Lecturer of Philosophy, B A., Arizona State University

Wise, John Macgregor (1999 , Assistant Professor of Communication Studies; B.A., Trinity University; M A., Ph.D , University of Illinois, Urbana Champaign

Wosinska, Wilhelmina 1994 , Senior Lecturer of Social Psychology, B.A , University of Warsaw Poland , M A , Ph D , Jagiellonian University Poland)

Wu, Jianguo *1995), Associate Professor of Ecosystem Ecology,* B.S., University of Inner Mongolia China); M.S., Ph D , Miami University

Y

Yungbluth, Stephen C. (2000), Lecturer of Communication Studies; B A , Xavier University, M.A., Ph.D , 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

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Vice President, ASU ..... Elaine P. Maimon
V ce Provost for Academ c Affairs ..... Glenn W. Irvin
Assoc ate V ce Provost, Academic Programs and
Graduate Stud es..... Fernando De gado
D rector, Curr culum and Academ c Articulat on ..... Julia R Ramsden
V ce Provost for Academ c Personnel..... Mi dred Garcia
Assoc ate V ce Provost Research and Faculty Deve opment..... A berto Pu ido
V ce Provost for Planning and Budget. ..... Barry R. Bruns
V ce Provost for Adm nistrat ve Affa rs ..... Gebeyehu Ejigu
V ce Provost for Inst tut onal Advancement ..... John E. Co l ns
Interim Dean, ASU West Library ..... Mar lyn Myers
Interim Dean of Students.. ..... Emily F. Cutrer

University Offices

V ce Provost for Research. ..... Jonathan F nk
Dean, College of Extended Educat on ..... Bette F DeGraw
Dean, Cra g and Barbara Barrett Honors Co ege..... Ted Humphrey

College of Arts and Sciences

Dean, Co lege of Arts and Sc ences..... Thomas J Ke l
Cochair, Amer can Stud es. ..... Cand ce Bredbenner
Cochair, Amer can Stud es .. .. Dorothy C. Broaddus
Chair, Integrative Studies .. .. L nda L. Stryker
Cha r, Interdisc pl nary Arts and Performance ..... Robert Taylor
Cha r, Life Sc ences..... Harvey F. Pough
Cha r, Socia and Behavioral Sciences..... Paul A. Miller
Cha r, Women's Stud es ..... Asta r G. M. Mengesha
Director M.A. Interd sc pl nary Stud es Program... ..... Andrew Kirby

College of Education

Dean, College of Educat on. ..... Michae A. Awender
Ass stant Dean, Co lege of Educat on ... . Ray R. Buss

College of Human Services

Dean, College of Human Services ..... Mark S. Searle
Cha r, Adm nistrat on of Justice ..... V ncent J. Webb
Cha r, Communication Stud es ..... Lesley D Mare
Cha r, Recreat on and Tourism Management..... Richard G telson
L aison, Nurs ng (ASU Main Program) .... Lasca Beck
Cha r, Socia Work. ..... Mel ssa R. Lavitt
Director, Gerontology Program ..... Janet Sh rreffs
Director, Partnership for Commun ty Deve opment ..... John T. Hultsman

Division of Collaborative Programs

Dean, D v s on of Co laborative Programs ..... Em y F. Cutrer
Coordinator, Bache or of App ied Sc ence Program. ..... Cynthia Rasmussen
Coordinator, Trans tion and Outreach Serv ces..... Deborah S. Moore
Coordinator, University Co lege Center ..... Christina Hahn
Director, Center for Writ ng Across the Curriculum Program.... ..... Robert W. Jones
Director, Research Consu ting Center..... Joseph M. Ryan
L aison Barrett Honors Col ege ..... Joseph M. Ryan

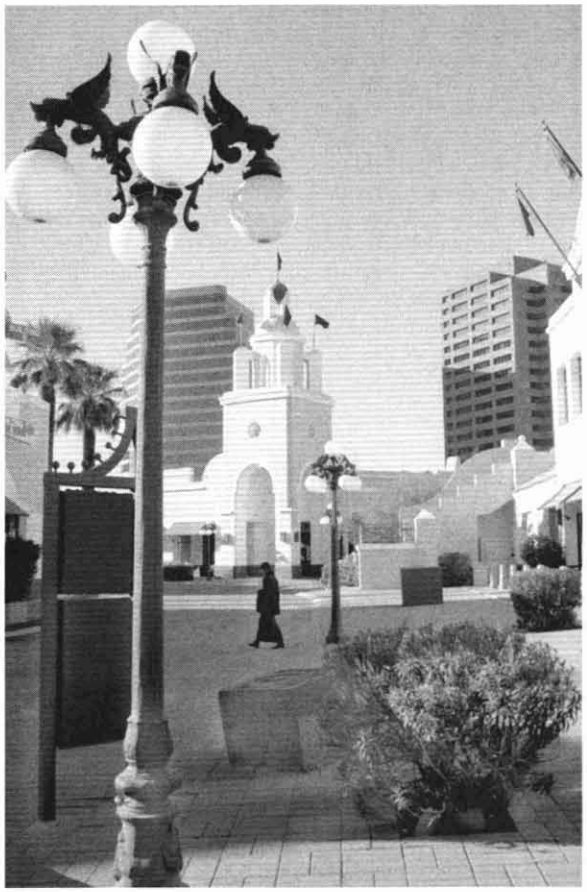
School of Management

Dean, School of Management.... ..... Bruce Forster
D rector, Accountancy Program..... W l iam Duncan
D rector, nstitute for International Bus ness..... Gary Anders
D rector, Master of Bus ness Adm nistrat on Program. ..... David Van Fleet
D rector, Undergraduate Globa Business Program .... John Greenhut

ASU Extended Campus

Bette F. DeGraw, D.P.A., Dean, College of Extended Education

www.asu.edu/xed



ASU Downtown Center

Tim Trumble photo

PURPOSE

The College of Extended Education was created in 1990 to extend the resources of ASU throughout Maricopa County, the state, and the region. 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 through 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 685, and the "Graduate Degrees and Majors Offered in Collaboration with the College of Extended Education" table, page 686.

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 plan 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.) and Integrative Studies (B.A.)

ASU West. Because of overlapping degree requirements and the flexibility built into each program, ASU West, working through the College of Extended Education, offers the same set of courses to meet the degree completion needs of students who bring differing educational experiences to the classroom. Thus, students who have completed an Associate of Applied Science (A.A.S.) degree could enroll in the B.A.S. degree program. Students entering the program with Associate of Arts (A.A.) degrees or some other combination of courses that totals 60 semester hours and encompasses the equivalent of the ASU General Studies requirement could receive the B.A. degree in Integrative Studies upon program completion. Both sets of students follow the same program of study.

Both degree programs emphasize focused study in critical thinking, communication, and leadership skills and include individual and team problem-solving experiences. Both include courses 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.

The Bachelor of Arts degree in Integrative Studies (B.A.) is an upper-division arts and sciences degree. Students are expected to read, write, and think critically which enables them to pursue postbaccalaureate employment, or graduate and professional degrees, in the broadest possible array of fields and specialization. This is a classical liberal arts degree, taught by interdisciplinary scholars in a student-oriented and lifelong learning fashion. Small classes and systematic assessment and feedback are defining characteristics of the program. Students complete 21 semester hours, including a gateway course in Adult Career Development; a capstone internship experience; and academic seminars in ethics, social and environmental theory; history and philosophy of sciences/mathematics; and multicultural perspectives on autobiographies, literature, and art. Students select one of the established minors or construct with a faculty advisor an area of academic concentration to complement the core curriculum with an additional 18 to 21 semester hours. For more information on the West Campus B.A., call 602/543-6000 or access the Web site at www.west.asu.edu/iasweb.

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, page 685.

For more information, call 480/727-1874.

TECHNOLOGY-SUPPORTED DEGREE PROGRAMS

History—B.A.

ASU Main. The faculty of the Department of History offer the B.A. degree completion program in History via technology. (Students are required to take two of the courses on campus in the evening.) For more information, call 480/965-8364.

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, or Psychology, 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

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, instrumentation, microcomputer systems, multimedia writing and technical communication, municipal operations management, operations management, production technology, 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.	Bilingual education English as a second language	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
Integrative Studies	B.A.	All minors available at ASU West, individualized concentration	College of Arts and Sciences ASU West
Interdisciplinary Studies	B.I.S.	See the "B.I.S. Concentrations" table, page 109.	Bachelor of Interdisciplinary Studies Advisory Committee
Political Science	B.A., B.S.	American public policy, civic education, international studies, public policy advocacy and lobbying, public policy analysis	Department of Political Science
Psychology	B.A., B.S.		Department of Psychology
Social Work	B.S.W.		School of Social Work
Sociology	B.A.	—	Department of Sociology

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 Scottsdale M.B.A. 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 is 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

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.

Graduate Degrees and Majors Offered in Collaboration with the College of Extended Education

Major	Degree	Concentration	Administered By
Business Administration	M.B A.		College of Business (ASU Main) School of Management ASU West)
Curriculum and Instruction	M.Ed.	Secondary education	College of Education
Educational Administration and Supervision	Ed D.		College of Education
Electrical Engineering	M.S.E.		College of Engineering and Applied Sciences
Engineering	M E.		School of Engineering
Public Administration	M.P.A	Public information management, public management, public policy analysis and evaluation, urban management and planning	School of Public Affairs

* This aborat ve pr >g am is offered by the three state univers'ties

DELTA Doctorate

ASU Main. The DELTA Doctorate, which leads to the Doc tor of Education degree in Educational Administration and Supervision, is available as an off can pus degree program. The program is targeted to qualified public school adminis trators For more information, call 480 965 6357

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 degree in E ectrical Engineering via interactive television. This pro ram meets the needs of the part tin e student who is working full tin e in industry Ten graduate courses are required, six should c nstitute 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 com prehensive examination covering topics in the major. Using the department's three year schedule of courses, students are able to complete course requirements over the interac tive 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 h gh y 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 ? four semester hour courses. For more inform ation, ca 480 965 3332

ASU West. The connectMBA from ASU West allows work ing professionals to complete a qual ty AACSB accredited M B A. w thout weekly attendance on campus. Course delivery combines classroom instruction every seventh weekend) with self paced, computer ass sted learning The two year program consists of 15 three sen ester hour courses For more infc rmation, access the Web site at www west.asu.edu som/mba.

ENGINEERING—M.E.

ASU Main. The tri university Master of Engineering degree program is intended to meet the educational needs of Arizona's pract cing engineers. With industry input, Ari zona'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 opportuni ties to design, in conjunction with an advisory committee, a program of study that can reflect the increasingly interdisci plinary 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 hours in applied engineering mathematics as well as three 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

ON-CAMPUS EVENING DEGREE PROGRAM

Public Administration—M.P.A.

ASU Main. The School of Public Affairs offers this inter disciplinary program. The program is 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 s tes. For more information, call 480/965 3926 or write

SCHOOL OF PUBLIC AFFA RS
ARIZONA STATE UNIVERS TY
PO BOX 870603
TEMPE AZ 85287 0603

WINTER SESSION (MAIN)

The College of Extended Education schedules the winter session courses in co laboration with academic departments.

The condensed, three-week 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 Program

Designed to help international students and professionals succeed in the world of business, this new program offers five courses that use reading, writing, and discussion exercises to gain practical knowledge of and confidence in American and international business practices. 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. The program's courses are international business, business decisions, business writing, business communications, and TOEIC test preparation. 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.

This certificate is not for academic credit.

English as a Second Language Certificate

The American English and Culture Program 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.

This certificate is not for academic credit.

Gerontology Certificate Program

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 6642 (ASU West).

Human Performance Improvement Certificate Program

The Human Performance Improvement Certificate Program is offered 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.

Nonprofit Management Certificate Program

The Nonprofit Management Institute is offered by the College of Extended Education and the United Way. This program is designed to enhance the management skills of those who serve nonprofit human services groups, hospitals, government agencies, churches, private schools, art organizations, environmental groups, and others in the nonprofit sector.

Individuals can receive a Certificate in Nonprofit Management along with 13 Continuing Education Units after completing 130 hours of the program. The individual class option permits participants to enroll in one or more classes on a per class basis. Additional full- and half-day workshops are also provided to help those in the nonprofit sector achieve excellence in managing nonprofit organizations. For more information, call 480 965 9200.

This certificate is not for academic credit.

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 a degree. All courses and degrees are offered through 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 academic standards of the university, 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 Technology. Distance Learning 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 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 135 courses offered by various ASU colleges each semester, and these courses are available for credit at a variety of remote locations, including students' homes. Students participating in televised courses from the work site or home can interact with faculty and students in the classroom on campus while class is in session via teleconferencing technology. Videotapes of most courses are available through University Libraries Video Resources. 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, Insight Cable, Cable America, Digital Choice TV, and other cable providers Televised courses are also available in university residence halls

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. A Master of Science in Engineering 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 6738

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 public 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 about Distance Learning Technology, call 480/965 6738, 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 university courses. Any individual 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 Students have up to one year to complete courses. 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.

The Nonprofit Management Institute is offered by the College of Extended Education and the Valley of the Sun United Way This program is designed to enhance the management skills of those who serve nonprofit human services groups, hospitals, government agencies, churches, private schools, art organizations, environmental groups, and others in the nonprofit sector. For more information, see "Nonprofit Management Certificate Program," page 687, or call 480 965-9200.

For more information about Academic and Professional Programs, call 480/965 9797

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 lan

guage for academic, professional, or personal reasons. Applicants must be at east 18 vears 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 are required to 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, structure, and writing. Academic advising and orientation to Arizona and the United States are integral parts of the program.

Program wide social activities each cycle include a field trip, a picnic, a cultural activity, visits to museums, historical sites, or musical presentations Campus housing and American Homestays are available.

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. Classes in conversation, speech improvement, and the Test of English as a Foreign Language are offered during alternate terms.

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 of study is also offered. Inquiries concerning admission requirements, enrollment, and fee schedules should be sent to

AMERICAN ENGLISH AND CULTURE PROGRAM
DEPARTMENT 4
AR ZONA STATE UN VERSITY
PO BOX 873504
TEMPE AZ 85287-3504

For more information, call 480/965 2376

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 classes 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 Textbooks for all courses held at the center are available at one of the ASU libraries usually at the beginning of each semester

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 are a wide range of related services. The center is available for use by outside organizations, subject to the limits of university 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 2337

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 687, 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 480 965 3046

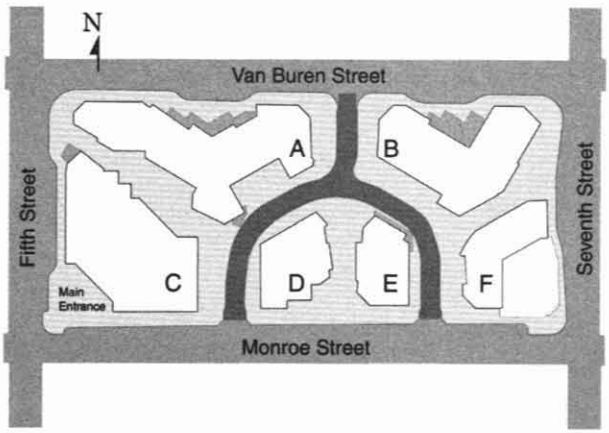
Advanced Public Executive Program The Advanced Public Executive Program of the College of Public Programs is housed at the ASU Downtown Center. This program is designed to provide public managers and administrators with analytical approaches and skills through short courses and seminars to help mobilize 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 the center at 480/727-2772.

ASU Downtown Center Map



ASU Extended Campus Administrative Personnel

Dean, College of Extended Education . . . . . . Bette F. DeGraw
Associate Dean . . . . . . William Verdini
Director, American English and Culture Program . . . . . . Mark D. Rentz
Director, Communications and Marketing . . . . . . Randy Bailey
Director, Development and Outreach . . . . . . Scott Sheldon
Director, Distance Learning Technology . . . . . . Elizabeth H. Craft
Director, Downtown Center . . . . . . Bette F. DeGraw
Director, Extended Campus Programs . . . . . . Jim Patzer
Director, Academic and Professional Programs . . . . . . Patricia A. Feldman
Director, Operations and Finance . . . . . . Cath e M. Fox

ASU Extended Campus Faculty and Academic Professionals

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

Craft, Elizabeth H. 1982, Senior Administrative Professional, College of Extended Education; Director, Distance Learning Technology, College of Extended Education. B.F.A., Ohio University, M.A., Arizona State University

DeGraw, Bette F. 1986, Administrative Professional, College of Extended Education, Associate Professor of Public Affairs, Dean, College of Extended Education; Director, Downtown Center, College of Extended Education, B.A., Thiel College M S W, Rutgers The State University of New Jersey; D P.A., Arizona State University

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

Kyselka, Christine K. (1990, Associate Administrative Professional, College of Extended Education Assistant Director Distance Learning Technology, College of Extended Education, B S M P A, Arizona State University

Pope, Donna (1999, Assistant Instructional Professional, College of Extended Education; Manager, Nonprofit Management Program, Academic and Professional Programs, College of Extended Education, B S W, Texas Women's University; M.S.S.W., University of Texas, Arlington

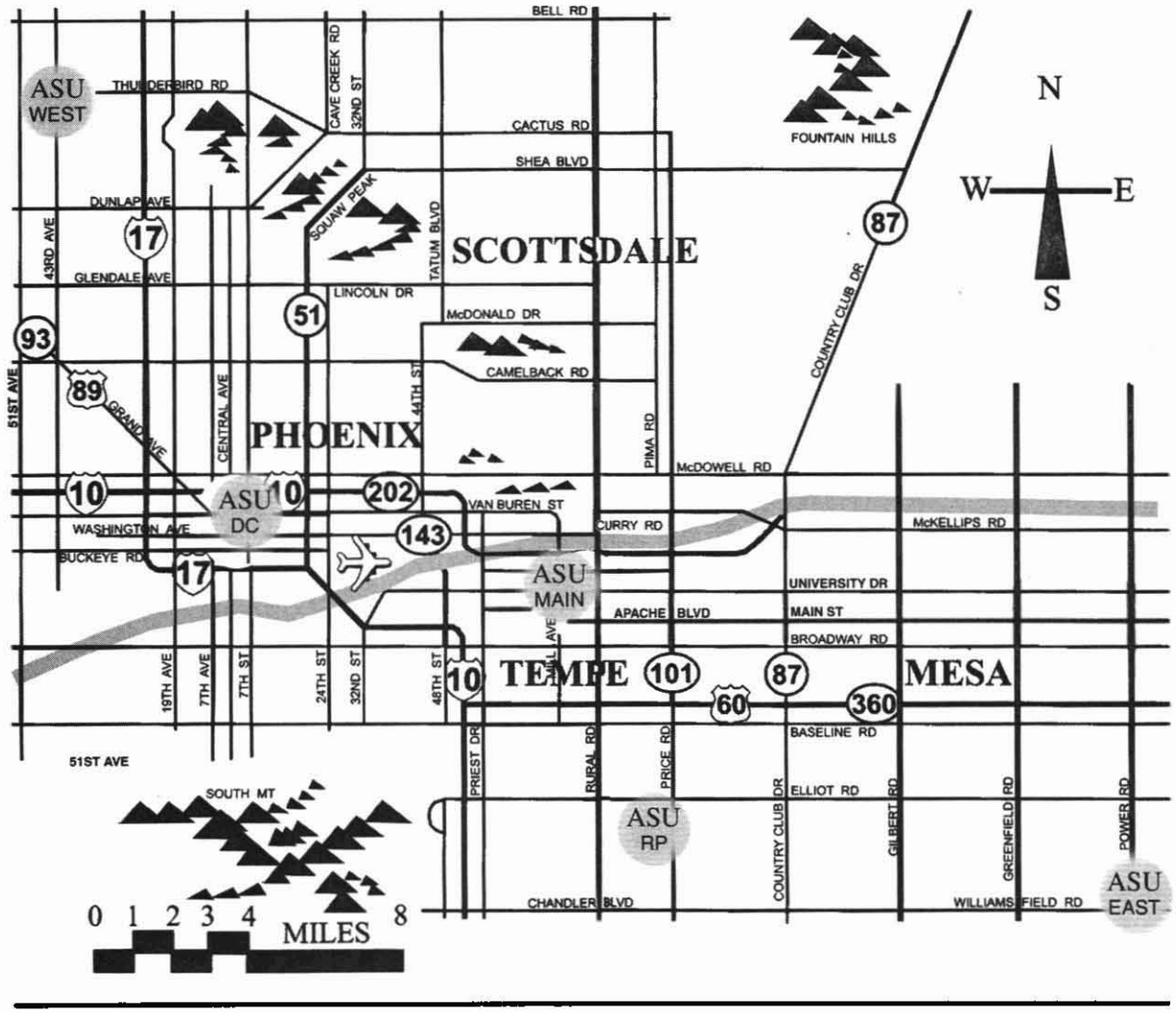
Verdini, William A. 1976, Associate Professor of Supply Chain Management; Associate Dean, College of Extended Education, B.S., Case Western Reserve University, M B A D B A Kent State University

ASU Extended Campus Directory

For the "ASU Main Directory," see page 522. For the "ASU East Directory," see page 662. For the "ASU West Directory," see page 674

Organization	Location	Telephone	Web Address
Extended Education, College of	ASUDC C319	480 965 9696	www.asu edu xed
Academic and Professional Programs	RITT B132	480 965-9797	www.asu.edu/xed/profprog/profprog.htm
	ASUDC	480/965-9200	—
American English and Culture Program	MAR P	480 965 2376	www asu edu xed aecp aboutaecp html
ASU Downtown Center	ASUDC	480/965-3046	www.asu.edu/xed/dtc
Communications and Marketing	ASUDC C319	480 965 9696	
Development and Outreach	ASUDC C250	480/727 5330	—
Distance Learning Technology	RITT A 129	480 965 6738	www.dlt.asu.edu
Extended Campus Programs	ASUDC C250	480 965-3046	www.asu.edu/xed/degrees.htm
Independent Learning	RITT B132	480 965-6563 or 1 800 533 4806	
Operations and Finance	ASUDC C319	480 965-9696	

ASU Vicinity Map



ASU MAIN — ASU Main
Near Downtown Tempe

ASU DC — ASU Downtown Center
Monroe and Fifth Streets, Phoenix

ASU EAST — ASU East
Power and Williams Field Roads, Mesa

ASU RP — ASU Research Park
Price and Elliot Roads, Tempe

ASU WEST — 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 North Central Association (NCA) Commission on Institutions of Higher Education Arizona State University East is recognized by the NCA as a full service campus and is accredited under the ASU Main umbrella Programs in the various colleges. schools, d visions, and departments are accredited by, affiliated with, or members of national bodies as described in the "Academic Accreditation at ASU Main and East" table. on this page; "Academic Affiliation" table. page 694; and "Academic Membership" table, page 695. 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 NCA Commission on Institutions of Higher Education Professional pro grams in the various academic areas are accredited by national bodies as described in the "Academic Accreditation at ASU West" table, page 694

Academic Accreditation at ASU Main and East

Unit or Program	Accredited By
College of Architecture and Environmental Design	
B.S.D., Interior Design	Foundation for Interior Design Education Research
B.S.L.A.	Landscape Architectural Accred tation Board
M Arch	National Architectural Accrediting Board
M.E P	Planning Accreditation Board
College of Business	
All programs	AACSB—International Association for Management Education
School of Accountancy and Information Management	AACSB International Association for Management Education
M.H.S.A. School of Health Administration and Policy	Accrediting Commission on Education for Health Services Administration
College of Education	
M.C., Counseling	Council for Accreditation of Counseling and Related Educational Programs
Ph.D., Counseling Psychology; Educat onal 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 Computing Sciences Accreditation Board
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
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
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 National League for Nursing
College of Public Programs	
B.S , Recreation	Council on Accreditation of the National Recreation and Park Association

* This program is accredited through the ASU Main College of Business

Academic Accreditation at ASU Main and East (continued)

Unit or Program	Accredited By
College of Public Programs (continued)	
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 Telecommunication	Accrediting Council on Education in Journalism and Mass Communications
College of Technology and Applied Sciences	
B.S., Aeronautical Engineering Technology; Electronics Engineering Technology; Manufacturing Engineering Technology	Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc.
B.S., Aeronautical Management Technology, with concentrations in airway science flight management and airway science management	Council on Aviation Accreditation
East College	
B.S., Business Administration*	AACSB—International Association for Management Education
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 College of Business.

Academic Accreditation at ASU West

Unit or Program	Accredited By
College of Human Services	
Department of Recreation and Tourism Management	National Recreation and Park Association/American Association for Leisure and Recreation
Department of Social Work	Council on Social Work Education
School of Management	
All programs	AACSB—International Association for Management Education

Academic Affiliation

Unit or Program	Affiliated 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
	International Interior Design Association
	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
	University Council for Educational Administration

Academic Affiliation (continued)

Unit or Program	Affiliated With
College of Nursing	
Continuing Extended Education Program	Arizona Nurses Association (American Nurses Credentialing Center's Commission on Accreditation)
Morrison School of Agribusiness and Resource Management	
B.S., M S Environmental Resources	Society for Range Management Soil and Water Conservation Society Wildlife Society

Academic Membership

Unit or Program	Membership With
Barrett Honors College	National Collegiate Honors Council
College of Education	American Association of Colleges for Teacher Education Association of Colleges and Schools of Education in State Universities and Land Grant Colleges University Council for Educational Administration
College of Law	Association of American Law Schools
College of Liberal Arts and Sciences	
Department of Anthropology	American Anthropological Association Council for Museum Anthropology
Department of 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 Exercise Science and Physical Education	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 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 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

Academic Membership (continued)

Unit or Program	Membership With
Department of Languages and Literatures	American Council on Teaching Foreign Language
	International Studies Association
	Modern Language Association
Department of Mathematics	American Mathematical Society
	Mathemat cal Association of America
	Rocky Mountain Mathematics Consortium
	Society for Industrial and Applied Mathematics
Department of 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
M.S., Ph.D., Molecular and Cellular Biology	American Society of Medical Technology
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
Department of 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 Photobiology
	American Society of Plant Physiologists
	American Society of Plant Taxonomy
	Arizona Nevada Academy of Science
	Botanical Society of An erica
	Botanical Soc ety of Japan
	California Botanical Society
	Ecological Society of America
	International Association of Landscape Ecology
	International Association of Plant Taxonomy
	International Association for Study of Plant Succulents
	International Association of Wood Anatomists
	Internationa Organization of Paleobotany
	International Photosynthesis Society
	International Phycological Society
	International Society of Arboriculture
	International Society of Ecological Modeling
	International Society of Plant Molecular Biology
	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 of Wetlands Scientists
	Society of Ecological Restoration
	Society for Econom c Botany

Academic Membership (continued)

Unit or Program	Membership With
Department of Plant Biology (continued)	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
Women's Studies Program	Association for Women in Science
	National Women's Studies Association
College of Nursing	American Association of Colleges of Nursing
	Western Institute of Nursing
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 and Voluntary Action
	Association for Volunteer Administration
	College Fund/UNCF
	Learning Institute
	National Center for Nonprofit Boards
	National Park and Recreation Association
	National Society of Fund Raising Executives
	National Training Institute for Community Youth Work
	Nonprofit Risk Management Center
	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	Arizona Justice Educators
	Association of Crimina Justice Doctoral Programs
	National Academic Advising
	Onati International Institute for the Sociology of Law
School of Public Affairs	National Association of Schools of Public Affairs and Administration
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 Telecommunication	Association of Schools of Journalism and Mass Communication
	Broadcast Education Association
East College	
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
Morrison School of Agribusiness and Resource Management	
B.S , Agribusiness with a concentration in professional golf management	Professional Golfer's Association of America

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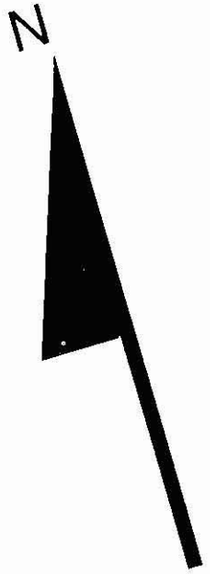
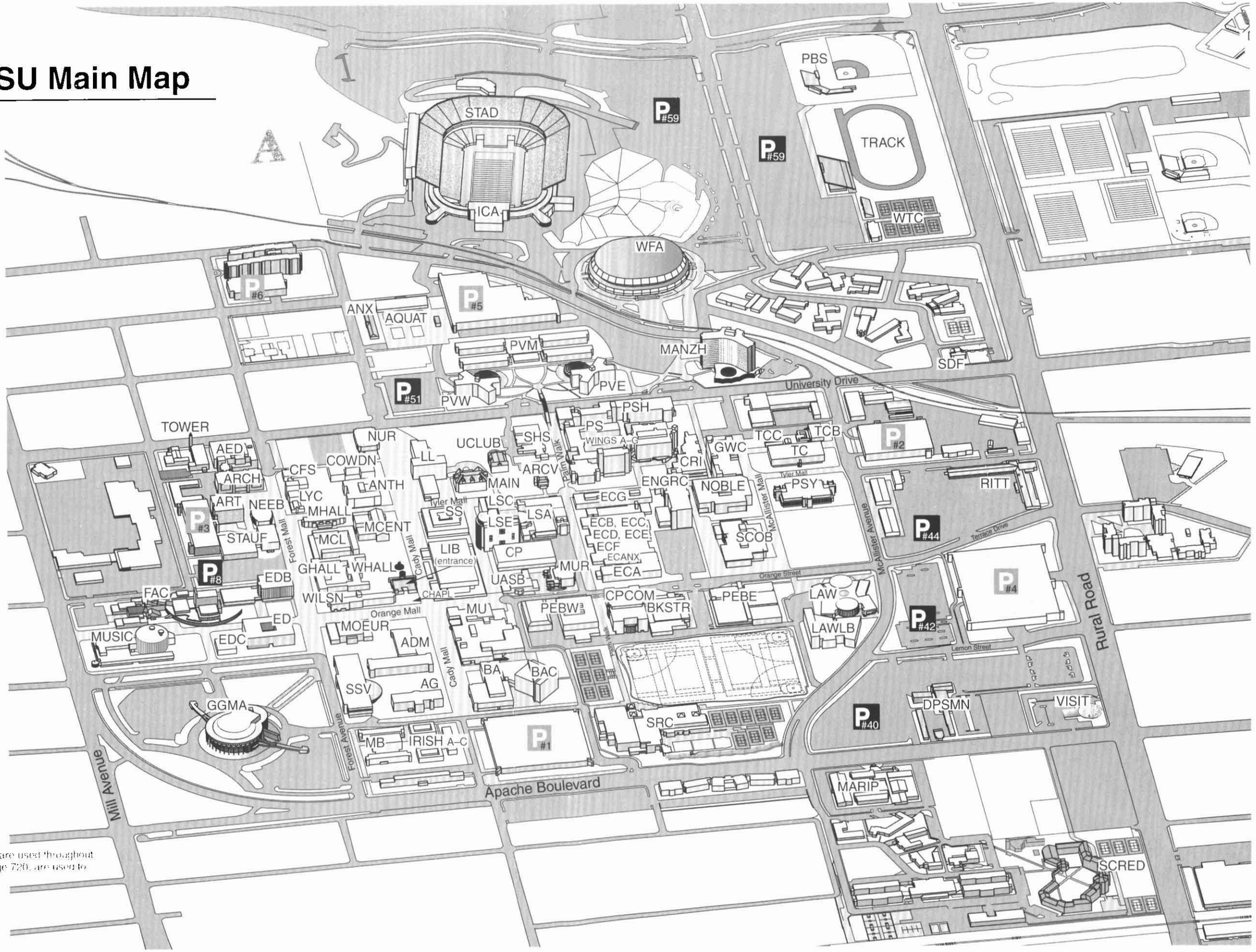
Building Abbreviations

ADM (Wings A B .. .. Adm nistration
AED College of Architecture and Environmental Design/North
AG ... . Agriculture Building
AGB1–4 .. .. ASU East Agribusiness Quads 1–4[1]
AGBFS . ASU East Agribusiness Food Science Lab
AIP .... ASU East American Indian Programs
ALTCH . ... ASU East Altitude Chamber
ANTH .... Anthropology Building
ANX .... Visual Arts Annex
AQUAT Wings A and B).... . Mona Plummer Aquatics Center
ARCH College of Architecture and Environmental Design/South
ARCV . ..... University Archives
ART .... Art Building
ARWH ... . Art Warehouse
ASUDC.. .... Downtown Center
BA . ... Business Administration Building
BAC ..... Business Administration C Wing
BKSTR ..... ASU Bookstore
CERA (Wings A and B) .. Ceramics Annex
CFS.. . ... Center for Family Studies
CHAPL . ...Danforth Chapel
CLCC Classroom Laboratory Computer Classroom Building
CLRB .. .. ASU East Classroom Building
CMPIN . ... Campus Inn
CNTR .... ASU East Academic Center Building
COMM2 ... .ASU East Communications Building
COWDN ..... Cowden Family Resource Build ng
CP . ... Central Plant
CPCOM ....Computing Con mons Building
CRI .... Cancer Research Inst tute
CRNX .... Classroom Annex[2]
CSB . ... Community Services Building
CSC .... Central Services Complex[2]
DPSMN. .... Department of Public Safety Main
EAW ... . ASU East Exercise and Wellness[1]
EAW2 ASU East Exercise and Wellness Annex[1]
ECA .. .. Engineering Center A Wing
ECB. . ...Engineering Center B Wing
ECC.. ....Engineering Center C Wing
ECD .... Engineering Center D Wing
ECE ....Engineering Center E W ng
ECF ....Engineering Center F Wing
ECG .... Engineering Center G W ng
ECANX . ...Engineering Center Annex
ED . ..... Hiram B. Farmer Education Build ng
EDB .... Ira D Payne Education Hall
EDC ..... Education Lecture Hall
ELAB ..... . Electronics Laboratory Building
ENGRC .... Engineering Research Center
FAB ..... Faculty and Administration Bu lding[2]
FABNX .....Faculty and Administration Building Annex[2]
FAC ....Nelson Fine Arts Center
FIELD.... . ... University Field Lab
FLHLB ..... . Fletcher Library[2]
GGMA .... Grady Gammage Memorial Auditorium
GHALL..... . . Dixie Gammage Hall
GWC .... Barry M Goldwater Center for Science and Engineering Research
HSC .... ASU East Health Sciences Center[1]
HSC2 .... ASU East Health Sciences Center Annex
IAPNX .. Interdisciplinary Arts and Performance Annex[2]
ICA .... Intercollegiate Athletics
IRISH (A–C . Frederick M Irish Hall
LAW .... John S Armstrong Hall
LAWLB . . ... John J. Ross William C Blakley Law Library
LIB .. . .Charles T Hayden Library
LL... . G Homer Durham Language and Literature Building
LSA..... .. . . Life Sc ences A Wing
LSC Life Sciences C Wing
LSE Life Sciences E W ng
LYC Lyceum Theatre
MAIN Old Main
MANZH ... .. Manzanita Ha l
MARIP .... Mariposa Hal
MCENT ... . A J Matthews Center
MCL . . . .. Jame H McClintock Hall
MB . ... M O Best Hall
MHALL .... Carrie Matthews Hall
MOEUR ....B B. Moeur Admin stration
MTCHL . . . . . Mitchell School Tempe
MU Memorial nion
MUR..... . ... John Murdock Le ture Hall
MUSIC (Wings E and W) .... Music Building
NEEB .. .. L S Neeb Hall
NOBLE . Daniel E Noble Science and Engineering Library
NUR . N rsing Build ng
PBS Packard Baseball Stadium
PEBE Physical Education Building East
PEBW ... .. . Physical Education Building West
PGM . ...ASU East Professiona Golf Management
PPS .... Physical Plant Shops
PRNT .. . ASU East IMT Print Fac lity[1]
PS (Wings A–G Ge rge M Bateman Physical Sciences Center
PSH Physical Science H Wing
PSY Psycho ogy Bu lding
PVE . ... Palo Verde East
PVM Pa o Verde Main
PVW .... Palo Verde West
RITT (Wings A and B) . . . Ritter Building
SANDS.. . ... Sands C assroom Building[2]
SCOB .. .. John W. Schwada Classroom Office Building
SCRED Sonora Center Residence Education Center
SDF . ... Solar Demonstration Facility
SHS (Wings A and B) Student Health Service
SIM .. ASU East Flight Simulator Building[1]
SOLAR ASU East Photovoltaics Testing Laboratory[1]
SRC Student Recreation Complex
SS ... Social Sciences Building
SSV . Student Servi es Bu lding
STAD . .... . .Sun Dev l Stadium
STAUF (Wings A and B Charles Sta ffer Communication Arts Building
TC..... .... Techno ogy Center
TCB . . .. Aerona tics Building
TCC . ... Technology Center Annex
TECH ASU East echnology Center[1]
TECH2 ASU East Technology Center Annex
THWH . Theatre Warehouse
TOWER (Wings A and B) University Tower Center
TRACK Joe Selleh Track
UASB . ..... Undergraduate Academic Services Building
UCB .. .. .University Center Building[2]
UCLUB .... University Club
UNION ASU East Wil iams Campus Union Building[1]
UVCMN .... University Commons
VISIT ASU Visitor's Information Center
WFA Wells Fargo Arena
WFLD. .... ASU West Alternate Locations[2]
WH . ... Wa ehouse
WHALL West Hal
WILSN George W. W lson Hall
WTC .... Whiteman Tennis Center

[1] Located at ASU East.
[2] Located at ASU West

ASU Main Map





Parking structure

Surface parking lot

Building abbreviations, which are used throughout the catalog and shown on page 720, are used to label buildings on this map.

Front Cover
(from top left to bottom right)
Matthews Center is home to various campus programs, including Disability Resources for Students and the student newspaper, *The State Press*.
College of Architecture and Environmental Design students enjoy attractive classrooms, buildings, and a terrace.
Palo Verde East, part of the Palo Verde Complex, houses a classroom, computer lab, and tutoring center in addition to living spaces for ASU freshmen.
The Student Services Building provides many study areas for students, such as this balcony. Also located in the building are several offices, including Student Financial Assistance, Undergraduate Admissions, and Residential Life.
The ASU Moon Devil Team came in second place at the Sixth Annual Great Moon Buggy Race held at the U.S. Space and Rocket Center in Huntsville, Alabama. Each year students from various majors participate (pictured: a Geography major, an Art major, and an Aerospace Engineering major).
Students can find a quiet place to study together at the Life Sciences cactus garden.

Back Cover
(clockwise from top)
The view atop Wilson Hall provides a grand perspective of the Hayden Library entrance, Hayden Lawn, "A" Mountain, and Sun Devil Stadium.
The Life Sciences bridge is an example of how ASU uses bold architectural elements to complement gardens and parks in Arizona's largest urban arboretum.
Members of the MAVRIC program – supported by the ASU Unsteady Wind Tunnel research team, ASU NASA Space Grant, and Lockheed-Sanders – display their models of autonomous flight vehicles.

Above
(clockwise from top)
The Tempe Town Lake, walking distance from campus, is a perfect place to study and relax.
A student-run radio station on campus, KASR, provides practical work experience for Broadcasting and Journalism majors.
The ASU Main campus provides many inviting outdoor areas to study, relax, or just read a paper.
Sitting on the steps of the light well, above Hayden Library's entrance, students enjoy a sunny day of studying.

ASU Arizona State University

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