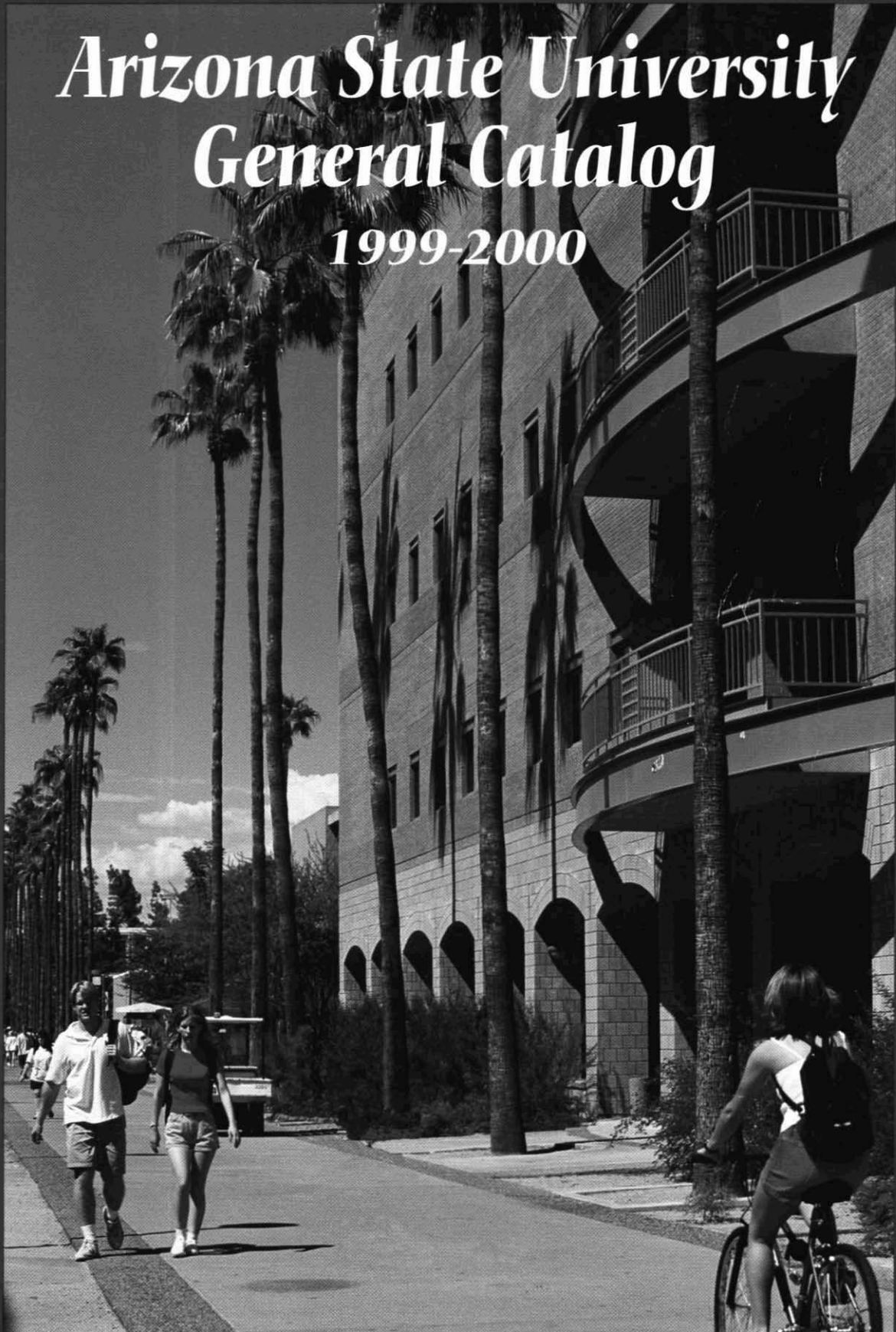


***ASU Bulletin / General Catalog 1999-2000***



**ASU** Bulletin

*Arizona State University  
General Catalog  
1999-2000*









# Arizona State University

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## 1999–2000 General Catalog

All colleges, schools, divisions and departments establish certain academic requirements that must be met before a degree is granted. Advisors, directors, department chairs and deans are available to help the student understand these requirements, but the student is responsible for fulfilling them. At the end of a student's course of study, if requirements for graduation have not been satisfied, the degree is not granted. For this reason, it is important for all students to acquaint themselves with all regulations to be informed throughout the college careers, and to be responsible for completing requirements. Course programs, and requirements described in the catalog may be suspended, deleted, restricted, supplemented or changed in any other manner, at any time, at the secret discretion of the university and the Arizona Board of Regents. The catalog does not establish a contractual relationship, but summarizes the total requirements the student must currently meet before qualifying for a faculty recommendation to the Arizona Board of Regents to award a degree.

Arizona State University reserves the right to change, without notice, any of the material information, requirements, regulations published in this catalog.

The catalog is also available on the Web at [www.asu.edu/aad/catalogs](http://www.asu.edu/aad/catalogs). Admissions information is available at

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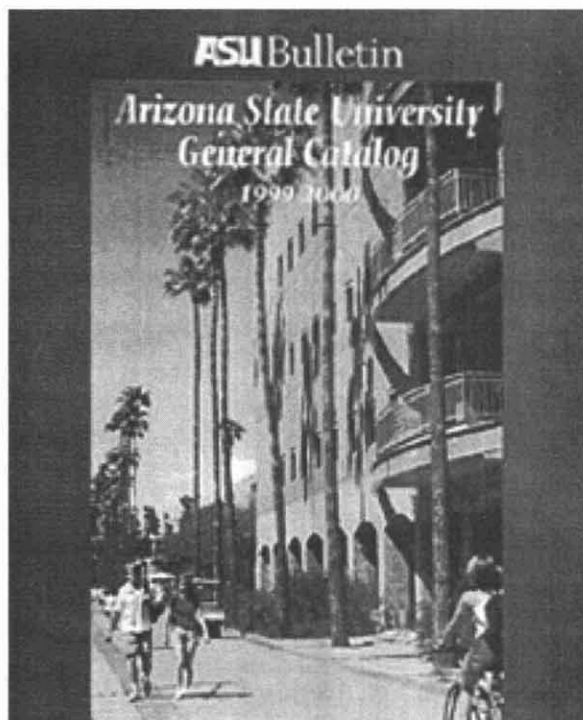
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**On the Cover** / Palm Walk takes bicyclists and pedestrians through the heart of the ASU Main campus, here passing by the Computing Commons.

Tim Trumble photo

The *General Catalog* is the official source of information for programs and requirements of ASU and its colleges, departments, and schools. Catalogs may be viewed on the Web at [www.asu.edu/aad/catalogs](http://www.asu.edu/aad/catalogs).

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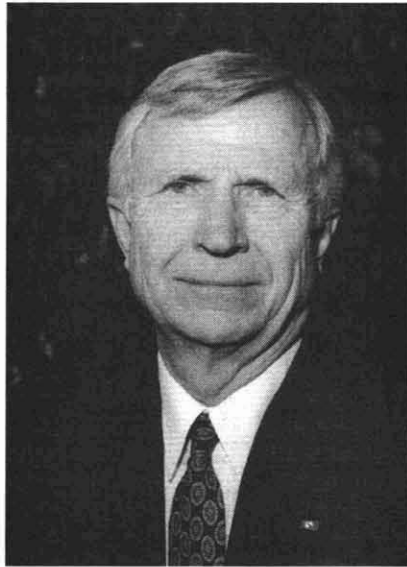
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MAIN CAMPUS

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To discuss specific matters of catalog content, please contact the units responsible.



President Lattie F. Coor Tim Trumble photo

Dear ASU Students and Prospective Students:

It is my personal pleasure to introduce the Arizona State University 1999–2000 *General Catalog*. It is intended to put a great deal of important information at your fingertips and serve as a guide through your university experience.

The catalog compiles a rather imposing list of programs, courses, requirements, and services. We hope it is organized in a manner that makes it easy to find the information most applicable to you and your course of studies.

While the catalog will answer many of your questions, nothing will substitute for the guidance your advisor can provide. I strongly encourage you to work closely with an advisor to plan your academic program.

On behalf of Arizona State University, I wish you a challenging and fulfilling experience as you work to achieve your goals.

Sincerely,

A handwritten signature in black ink, appearing to read "Lattie F. Coor". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Lattie F. Coor  
President

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# Course Prefix Index

The course descriptions in this catalog refer to ASU Main and ASU East courses. For ASU West course descriptions, see the *ASU West Catalog*. For ASU Main and ASU East graduate course descriptions, see the *Graduate Catalog*.

AAD	Architectural Administration and Management	125	COM	Communication	450
ACC	Accountancy	157	CON	Construction	205
ADE	Architectural Design and Technology Studios	125	CPP	College of Public Programs	448
AES	Aerospace Studies	334	CPY	Counseling Psychology	
AET	Aeronautical Engineering Technology	569	CSE	Computer Science and Engineering	233
AFH	African American Studies	336	CSH	Chicana and Chicano Studies	352
AFR	African American Studies	336	CSS	Chicana and Chicano Studies	352
AFS	African American Studies	337	DAH	Dance History	277
AGB	Agribusiness	546	DAN	Dance	277
AIS	American Indian Studies	448	DCI	Curriculum and Instruction	185
AJS	Administration of Justice		DSC	Design	135
AMS	American Studies		ECD	Early Childhood Education	185
AMT	Aeronautical Management Technology	555	ECE	Engineering Core	209
ANP	Environmental Analysis and Programming	126	ECN	Economics	160
APA	Asia Pacific American Studies	448	EDA	Educational Administration and Supervision	
APH	Architectural Philosophy and History	126	EDP	Educational Psychology	193
ARA	Art Auxiliary	269	EED	Elementary Education	187
ARB	Arabic	355	EEE	Electrical Engineering	238
ARE	Art Education	269	EET	Electronics Engineering Technology	560
ARP	Architecture Professional Studies	127	EMC	Educational Media and Computers	186
ARS	Art History	270	ENG	English	356
ART	Art	272	EPD	Environmental Design and Planning <sup>2</sup>	
ASB	Anthropology	338	EPE	Exercise Science/Physical Education	360
ASC	Applied Science Core	549	ERS	Environmental Resources	144
ASE	Analysis and Systems	239	ETC	Engineering Technology Core	552
ASM	Anthropology	340	ETH	Ethnic Studies	
AST	Astronomy	409	ETM	Environmental Technology Management	565
ATE	Architectural Technology	127	FAS	Family Studies	365
AVC	Architectural Communication	178	FIN	Finance	162
BIO	Biology	343	FLA	Foreign Languages	385
BIS	Bachelor of Interdisciplinary Studies	115	FON	Food and Nutrition	365
BLE	Bilingual Education	188	FRD	Family Resources and Human Development	366
BME	Bioengineering	219	FRE	French	386
BUE	Business Education	190	FSM	Fire Service Management	566
BUS	Business Administration	174	GCU	Cultural Geography	368
CAM	Campus Communities	42	GER	German	387
CCS	Chicana and Chicano Studies	352	GLB	Global Business	
CDE	Child Development	364	GLG	Geology	372
CED	Counselor Education <sup>2</sup>		GPH	Physical Geography	370
CEE	Civil and Environmental Engineering	227	GRA	Graphic Design	135
CET	Computer Engineering Technology	559	GRK	Ancient Greek	388
CGC	Computer Graphic Communications	563	GRN	Gerontology	303
CHE	Chemical Engineering	220	HCR	Health Care Related	439
CHI	Chinese	385	HEB	Hebrew	388
CHM	Chemistry	349	HED	Higher and Postsecondary Education <sup>2</sup>	
CIS	Computer Information Systems	158	HEE	Home Economics Education	366
CLS	Clinical Laboratory Sciences/Medical Technology	401	HES	Health Science	362
COB	College of Business	155	HIS	History	374
COE	College of Education		HON	Honors	318
			HPS	History and Philosophy of Science	405

HRM	Human Resources Management <sup>1</sup>	
HSA	Health Services Administration	164
HUD	Housing and Urban Development	145
HUM	Humanities	378
IAP	Interdisciplinary Arts and Performance	
IAS	Integrative Studies	
IBS	International Business Studies	163
IDN	Indonesian	388
IED	Indian Education	189
IEE	Industrial and Management Systems Engineering	242
IMC	Information and Management Core	566
IND	Industrial Design	136
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IPO	International Program Overseas	59
ISM	Information Systems Management	
ITA	Italian	388
ITM	Industrial Technology Management	566
JAC	Joint Admission Continuous Enrollment	542
JPN	Japanese	389
JRN	Journalism	455
JUS	Justice Studies	459
KOR	Korean	389
LAT	Latin	390
LAW	Law <sup>2</sup>	
LES	Legal and Ethical Studies	174
LIA	Liberal Arts and Sciences	333
LIN	Linguistics	
LIS	Library Science	189
LNT	Learning and Instructional Technology	
LSC	Life Sciences <sup>1</sup>	
MAE	Mechanical and Aerospace Engineering	249
MAT	Mathematics	396
MCB	Molecular and Cellular Biology	
MCE	Multicultural Education	189
MCO	Mass Communication	456
MET	Manufacturing Engineering Technology	569
MGT	Management	169
MHL	Music History Literature	287
MIC	Microbiology	401
MIS	Military Science	404
MKT	Marketing	172
MSE	Materials Science and Engineering	221
MTC	Music Theory and Composition	287
MTE	Mathematics Education	398
MUE	Music Education	288
MUP	Music Performance	289
MUS	Music	292
NOR	Norwegian	390
NUR	Nursing	439
OPM	Operations and Production Management	170
PAF	Public Affairs	461
PGS	Psychology	421
PHI	Philosophy	405
PHS	Physical Sciences	409
PHY	Physics	409
PLA	Landscape Architecture	145
PLB	Plant Biology	414
POL	Politics	
POR	Portuguese	390
POS	Political Science	417
PSY	Psychology	422
PUB	Scholarly Publishing	
PUP	Urban and Environmental Planning	146
QBA	Quantitative Business Analysis	161, 171
RDG	Reading Education	189
REA	Real Estate	175
REC	Recreation	464
REL	Religious Studies	424
RUS	Russian	390
SBS	Social and Behavioral Sciences <sup>1</sup>	
SCA	Scandinavian	391
SCM	Supply Chain Management	175
SED	Secondary Education	190
SEM	Science and Engineering of Materials	
SHS	Speech and Hearing Science	429
SOC	Sociology	427
SPA	Spanish	391
SPE	Special Education	190
SPF	Educational Policy Studies	193
STE	Society, Values, and Technology	210
STP	Statistics and Probability	399
SWE	Swedish	393
SWG	Social Work <sup>2</sup>	
SWU	Social Work	470
TCM	Telecommunication	456
THA	Thai	393
THE	Theatre	297
THP	Theatre Performance and Production	298
TWC	Technical Writing and Communication	549
UET	Microelectronics Engineering Technology	561
UNI	University	113
VTN	Vietnamese	393
WAC	Writing Across the Curriculum	359
WSH	Women's Studies	432
WST	Women's Studies	432

<sup>1</sup> See the *ASU West Catalog*.

<sup>2</sup> See the *Graduate Catalog*.

# Academic Organization

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Organized under ASU Main, ASU East, ASU West, and ASU Extended Campus are colleges, schools, departments, and other administrative units whose faculty offer courses

## ASU Main

### College of Architecture and Environmental Design

School of Architecture  
School of Design  
School of Planning and Landscape Architecture

### College of Business

Department of Economics  
Department of Finance  
Department of Management  
Department of Marketing  
Department of Supply Chain Management  
School of Accountancy and Information Management  
School of Health Administration and Policy

### College of Education

Division of Curriculum and Instruction  
Division of Educational Leadership and Policy Studies  
Division of Psychology in Education

### College of Engineering and Applied Sciences

Del E. Webb School of Construction  
School of Engineering  
Department of Chemical, Bio, and Materials Engineering  
Department of Civil and Environmental Engineering  
Department of Computer Science and Engineering  
Department of Electrical Engineering  
Department of Industrial and Management Systems Engineering  
Department of Mechanical and Aerospace Engineering

### College of Fine Arts

Department of Dance  
Department of Theatre  
School of Art  
School of Music

### College of Law

### College of Liberal Arts and Sciences

African American Studies Program  
Department of Aerospace Studies  
Department of Anthropology  
Department of Biology  
Department of Chemistry and Biochemistry  
Department of Chicana and Chicano Studies  
Department of English  
Department of Exercise Science and Physical Education  
Department of Family Resources and Human Development

Department of Geography  
Department of Geology  
Department of History  
Department of Languages and Literatures  
Department of Mathematics  
Department of Microbiology  
Department of Military Science  
Department of Philosophy  
Department of Physics and Astronomy  
Department of Plant Biology  
Department of Political Science  
Department of Psychology  
Department of Religious Studies  
Department of Sociology  
Department of Speech and Hearing Science  
Interdisciplinary Humanities Program  
Women's Studies Program

### College of Nursing

### College of Public Programs

American Indian Studies  
Asian Pacific American Program  
Department of Communication  
Department of Recreation Management and Tourism  
Nonprofit Leadership and Management Program  
School of Justice Studies  
School of Public Affairs  
School of Social Work  
Walter Cronkite School of Journalism and Telecommunication

### Division of Undergraduate Academic Services

Bachelor of Interdisciplinary Studies  
University 100 Program  
Writing Across the Curriculum

### Graduate College

### University Honors College

## ASU East

### Morrison School of Agribusiness and Resource Management

### East College

### College of Technology and Applied Sciences

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

## ASU West

### College of Arts and Sciences

Department of American Studies  
Department of Integrative Studies  
Department of Interdisciplinary Arts and Performance  
Department of Life Sciences  
Department of Social and Behavioral Sciences  
Ethnic Studies Program  
Women's Studies Program

### College of Education

Undergraduate Professional Teacher Preparation  
Graduate Programs  
Postbaccalaureate Programs for Teacher Certification

### College of Human Services

Department of Administration of Justice  
Department of Communication Studies  
Department of Recreation and Tourism Management  
Department of Social Work  
Gerontology Program  
Nursing (ASU Main program)

### Division of Collaborative Programs

Center for Writing Across the Curriculum  
Research Consulting Center  
University College Center  
University Honors College

### School of Management

Accountancy  
Business Administration  
Global Business

### University Honors College

## ASU Extended Campus

### College of Extended Education



# ASU Baccalaureate Degrees

Baccalaureate degrees, majors, and concentrations offered at ASU Main, ASU East, and ASU West are shown in the “ASU Baccalaureate Degrees” table below, which points to the primary page where more information can be found. The table shows only officially approved concentrations; other informal areas of study may also be available. Where indicated, the approved area of study is called an “emphasis” or some other name in place of “concentration.” For graduate degrees, see the “ASU Graduate Degrees” table, page 311

## ASU Baccalaureate Degrees

Degree/Major	Concentration	Campus	Page
<b>Bachelor of Applied Science</b>			
Applied Science	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, operations management, production technology, resource team specialist, semiconductor technology, software technology applications, technical graphics	East	554
	All minors available at ASU West, individualized concentration	West	580
<b>Bachelor of Arts</b>			
African American Studies American Studies	Emphases: American cultures, American lives, American systems, writing	Main	336
		West	580
Anthropology	Art history, photographic studies, studio art	Main	337
Art		Main	264
Asian Languages (Chinese Japanese)	Emphases: broadcast journalism, business/management	Main	380
Broadcasting		Main	454
Chemistry	Humanities/cultural sciences, social sciences policy	Main	346
Chicana and Chicano Studies		Main	351
Communication	Emphases: communication and culture; communication and organizations; communication and relationships; rhetoric, philosophy, and media studies	Main	448
Communication Studies		West	580
Economics	Linguistics, literature	Main	159, 353
English		West	354 580
French	Meteorology climatology, urban studies	Main	381
Geography		Main	367
German	Architecture, architecture, culture, and society; business, design, film studies; humanities/liberal arts, justice studies; planning	Main	381
History		West	373 580
Humanities	All minors available at ASU West, individualized concentration	Main	378
Integrative Studies		West	580
Interdisciplinary Studies	Media, music, performance studies, theater/performance, visual art	Main	330
Interdisciplinary Arts and Performance		West	580
Italian		Main	381

<sup>1</sup> Applications for this program are not being accepted at this time

- See “Approved Concentrations,” page 1-4

<sup>3</sup> This major requires more than 120 semester hours to complete.

<sup>4</sup> This program is administered by ASU Main

## ASU Baccalaureate Degrees (continued)

Degree/Major	Concentration	Campus	Page
<b>Bachelor of Arts (continued)</b>			
Journalism	Emphases: news-editorial, public relations, visual journalism	Main	454
Mathematics		Main	393
Music		Main	280
Philosophy		Main	404
Political Science		Main	416
Politics		West	580
Psychology		Main	420
		West	580
Religious Studies		Main	423
Russian		Main	381
Social and Behavioral Sciences	Emphases: interdisciplinary behavioral sciences, interdisciplinary social sciences	West	580
Sociology		Main	426
		West	580
Spanish		Main	382
		West	580
Theatre	Acting, design/technical theatre, directing/stage management, history/theory and criticism	Main	293
Women's Studies		Main	431
		West	580
<b>Bachelor of Arts in Education</b>			
Early Childhood Education		Main	179
Elementary Education	Bilingual education/English as a second language	Main	179
		East <sup>4</sup>	549
Elementary Education	Bilingual education, early childhood education, English as a second language	West	580
	Option middle school education		
Secondary Education	Academic specializations: biological sciences, business education, chemistry, Chinese, communication, economics, English, family resources and human development (home economics), French, geography, German, history, Japanese, journalism, mathematics, mathematics/chemistry, mathematics/physics, physical education, physics, physics/chemistry, political science, Russian, social studies, Spanish	Main	179
Secondary Education	Academic specializations: biological sciences, English, history, mathematics, social studies	West	580
	Option: middle school education		
Selected Studies in Education <sup>1</sup>		Main	178
Special Education		Main	179
		West	580
<b>Bachelor of Fine Arts</b>			
Art	Art education, ceramics, drawing, fibers, intermedia, metals, painting, photography, printmaking, sculpture	Main	265
Dance	Choreography, dance education, dance studies, performance	Main	276
Theatre	Theatre education	Main	295
<b>Bachelor of Interdisciplinary Studies<sup>2</sup></b>			
Interdisciplinary Studies		Main	114
<b>Bachelor of Music</b>			
Music Education	Choral general, instrumental, string	Main	280
Music Therapy		Main	285
Performance	Guitar, jazz, keyboard, music theatre, orchestral instrument, piano accompanying, voice	Main	282
Theory and Composition	Composition, theory	Main	286

## ASU Baccalaureate Degrees (continued)

Degree/Major	Concentration	Campus	Page
<b>Bachelor of Science</b>			
Accountancy		Main	157
		West	580
Administration of Justice		West	580
Aeronautical Engineering Technology <sup>3</sup>		East	568
Aeronautical Management Technology <sup>3</sup>	Airway science flight management, airway science management	East	552
Agribusiness	Food science, general agribusiness, international agribusiness, preveterinary medicine, professional golf management, resource management	East	544
Biology	Biology and society	Main	341
Chemistry	Biochemistry	Main	347
Clinical Laboratory Sciences		Main	400
Communication		Main	448
Communication Studies	Emphases: communication and culture; communication and organizations, communication and relationships; rhetoric, philosophy, and media studies	West	580
Computer Information Systems		Main	157
Computer Science <sup>3</sup>		Main	229, 352
Conservation Biology		Main	342
Construction <sup>3</sup>	Options: general building construction, heavy construction, residential construction, specialty construction	Main	202
Economics		Main	159, 353
Electronics Engineering Technology <sup>3</sup>	Computer systems, electronic systems, microelectronics, telecommunications	East	557
Engineering Interdisciplinary Studies		Main	198
Environmental Resources	Natural resource management	Main	138
Exercise Science/Physical Education	Exercise and wellness, exercise science, physical education	Main	359
Family Resources and Human Development	Family resources and human development in business, family studies/child development, human nutrition—dietetics	Main	362
Finance		Main	162
Geography	Meteorology climatology, urban studies	Main	367
Geology		Main	371
Global Business	Financial management, human resources management, information systems management, international studies, marketing	West	580
History		Main	373
Industrial Technology <sup>3</sup>	Environmental technology management, industrial technology management, information technology	East	561
Interdisciplinary Studies		Main	330
Justice Studies		Main	458
Life Sciences	Emphases: cell biology and physiology, ecology and organismal biology, human biology and environment	West	580
Management		Main	166
Manufacturing Engineering Technology <sup>3</sup>	Manufacturing engineering technology, mechanical engineering technology	East	567
Marketing		Main	171
Mathematics	Options: applied mathematics, computational mathematics, general mathematics, pure mathematics, statistics and probability	Main	394
Microbiology		Main	399
Physics	Emphasis: astronomy Options I, II	Main	406

<sup>1</sup> Applications for this program are not being accepted at this time

<sup>2</sup> See "Approved Concentrations," page 114.

<sup>3</sup> This major requires more than 120 semester hours to complete

<sup>4</sup> This program is administered by ASU Main

## ASU Baccalaureate Degrees (continued)

Degree/Major	Concentration	Campus	Page
<b>Bachelor of Science (continued)</b>			
Plant Biology	Environmental science and ecology, molecular bio sciences, biotechnology, urban horticulture	Main	412
Political Science		Main	416
Politics		West	580
Psychology		Main	420
		West	580
Real Estate		Main	174
Recreation	Recreation management tourism	Main	462
Recreation Tourism and Management		West	580
Social and Behavioral Sciences	Emphases: interdisciplinary behavioral sciences, interdisciplinary social sciences	West	580
Sociology		West	580
Speech and Hearing Science		Main	428
Supply Chain Management		Main	174
Women's Studies		Main	431
		West	580
<b>Bachelor of Science in Design</b>			
Architectural Studies		Main	121
Design Science		Main	129
Graphic Design		Main	129
Housing and Urban Development		Main	138
Industrial Design		Main	129
Interior Design <sup>3</sup>		Main	129
<b>Bachelor of Science in Engineering<sup>3</sup></b>			
Aerospace Engineering <sup>3</sup>	Emphases: aerodynamics, aerospace materials, aerospace structures, computer methods, design, mechanical, propulsion, system dynamics and control	Main	244
Bioengineering <sup>3</sup>	Emphases: biochemical engineering, bioelectrical engineering, biomaterials engineering, biomechanical engineering, biomedical imaging engineering, biosystems engineering, molecular and cellular bioengineering, premedical engineering	Main	213
Chemical Engineering <sup>3</sup>	Emphases: biochemical, biomedical, environmental, materials, premedical, process engineering, semiconductor processing	Main	210
Civil Engineering <sup>3</sup>	Option: environmental engineering	Main	223
Computer Systems Engineering <sup>3</sup>		Main	230
Electrical Engineering <sup>3</sup>		Main	236
Engineering Special Studies <sup>3</sup>	Option: premedical engineering	Main	252
Industrial Engineering <sup>3</sup>		Main	241
Materials Science and Engineering <sup>3</sup>	Emphases: biomaterials, ceramic materials, energy systems, integrated circuit materials, manufacturing and materials processing, mechanical metallurgy, metallic materials systems, polymers and composites	Main	216
Mechanical Engineering	Emphases: aerospace; biomechanical, computer methods; control and dynamic systems, design; energy systems, engineering mechanics; manufacturing, stress analysis, failure prevention, and materials; thermic sciences	Main	246
<b>Bachelor of Science in Landscape Architecture</b>			
Landscape Architecture		Main	138
<b>Bachelor of Science in Nursing</b>			
Nursing		Main	435
		West <sup>4</sup>	580

ASU Baccalaureate Degrees (continued)

Degree/Major	Concentration	Campus	Page
<b>Bachelor of Science in Planning</b> Urban Planning		Main	138
<b>Bachelor of Social Work</b> Social Work		Main West	465 580

<sup>1</sup> Applications for this program are not being accepted at this time.

<sup>2</sup> See "Approved Concentrations," page 114.

<sup>3</sup> This major requires more than 120 semester hours to complete.

<sup>4</sup> This program is administered by ASU Main.



Museum of Geology

Tim Trumble photo

# University Calendar

## April 1999

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
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## May 1999

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30	31					

## June 1999

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26	27	28	29	30		

## July 1999

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## August 1999

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29	30	31				

## 1999

Check the 1999 *Summer Sessions Bulletin* for details.

Mon., Feb 1	Registration and drop/add for first five week session and eight week session
Wed., June 2	
Mon., Feb. 1	Registration and drop/add for second five week session
Wed., July 7	
Tues., Apr. 27	Final tuition payment deadline for all summer sessions (For students who register after April 27, fees are due daily.)
Mon., May 31	Classes are excused for Memorial Day
Tues., June 1	Instruction begins for first five week session and eight week session
Tues., June 8	Unrestricted withdrawal deadline for first five week session
Tues., June 8	Unrestricted withdrawal deadline for eight week session
Fri., June 18	Restricted course withdrawal for first five week session and eight week session
Fri., June 25	Restricted complete withdrawal deadline for first five week session
Fri., July 2	August graduation filing deadline (must be met to have name appear in commencement program)
Fri., July 2	First five week session ends
Mon., July 5	Classes are excused for Independence Day
Tues., July 6	Instruction begins for second five week session
Tues., July 13	Unrestricted withdrawal deadline for second five-week session
Fri., July 16	Restricted complete withdrawal deadline for eight week session
Fri., July 23	Eight week session ends
Fri., July 23	Restricted course withdrawal deadline for second five-week session
Fri., July 30	Restricted complete withdrawal deadline for second five week session
Thurs., Aug 5	Second five week session ends
Fri., Aug. 6	Commencement

## 1999

### Fall Semester

Check the fall 1999 *Schedule of Classes* for details and to confirm these dates.

Thurs., Apr. 1	Preregistration
Fri., Apr. 9	
Mon., Apr. 26-	Drop/add
Fri., Aug 27	
Wed., Apr. 28	Registration
Fri., Aug 27	
Tues., Aug. 3	Final tuition payment deadline for fall 1999 (For students who register after Aug. 3, fees are due daily.)
Thurs., Aug. 19	Experiencing ASU: Orientation '99 activities
Sun., Aug 22	
Thurs., Aug. 19	New Faculty and Academic Professional Orientation and Reception
Mon., Aug. 23	Instruction begins

**September 1999**

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**October 1999**

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31						

**November 1999**

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**December 1999**

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**January 2000**

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**February 2000**

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Mon., Sept. 6	Classes are excused for Labor Day
Fri., Sept. 17	Unrestricted withdrawal deadline
Fri., Oct. 1	Winter session (College of Extended Education [CEE]) registration begins
Fri., Oct. 15	December graduation filing deadline (must be met to have name appear in commencement program)
Fri., Oct. 29	Restricted course withdrawal deadline
Thurs., Nov. 11	Classes are excused for Veterans Day
Thurs., Nov. 25	Classes are excused for Thanksgiving recess
Fri., Nov. 26	
Thurs., Dec. 2	Restricted complete withdrawal deadline
Wed., Dec. 8	Instruction ends
Thurs., Dec. 9	Reading day
Fri., Dec. 10– Sat., Dec. 11;	Final examinations
Mon., Dec. 13– Thurs., Dec. 16	
Fri., Dec. 17	Commencement
Sat., Dec. 18	Midyear recess begins
Tues., Dec. 28	Winter session (CEE) instruction begins

**2000**

**Spring Semester**

Check the spring 2000 *Schedule of Classes* for details and to confirm these dates.

Mon., Oct. 25	Preregistration
Tues., Nov. 2, 1999	
Mon., Nov. 15, 1999	Drop/add
Fri., Jan. 21, 2000	
Wed., Nov. 17, 1999	Registration
Fri., Jan. 21, 2000	
Mon., Dec. 20, 1999	Final tuition payment deadline for spring 2000 (For students who register after Jan. 4, fees are due daily.)
Fri., Dec. 31, 1999	Winter session classes are excused for New Year's Day
Thurs., Jan. 13	Orientation and advising for new transfer students
Fri., Jan. 14	Orientation and advising for new freshmen
Fri., Jan. 14	Winter session (CEE) instruction ends
Mon., Jan. 17	Classes are excused for Martin Luther King Jr. Day
Tues., Jan. 18	Instruction begins
Fri., Feb. 11	Unrestricted withdrawal deadline
Sun., Mar. 12	Classes are excused for spring recess
Sun., Mar. 19	
Fri., Mar. 31	May graduation filing deadline (must be met to have name appear in commencement program)
Fri., Mar. 31	Restricted course withdrawal deadline
Thurs., Apr. 27	Restricted complete withdrawal deadline
Wed., May 3	Instruction ends
Thurs., May 4	Reading day

**March 2000**

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**April 2000**

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**May 2000**

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21	22	23	24	25	26	27
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**June 2000**

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**July 2000**

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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

**August 2000**

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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Fri., May 5  
Sat., May 6;  
Mon., May 8  
Thurs., May 11  
Fri., May 12

Final examinations

Commencement

**2000****Summer Sessions**

Check the 2000 *Summer Sessions Bulletin* for details and to confirm these dates.

Mon., Jan. 31	Registration and drop/add for first five week session and eight week session
Wed., May 31	
Mon., Jan. 31	Registration and drop add for second five week session
Tues., July 5	
Tues., Apr. 25	Final tuition payment deadline for all summer sessions (For students who register after April 25, fees are due daily.)
Mon., May 29	Memorial Day Holiday
Tues., May 30	Instruction begins for first five week session and eight week session
Tues., June 6	Unrestricted withdrawal deadline for first five week session
Tues., June 6	Unrestricted withdrawal deadline for eight week session
Fri., June 16	Restricted course withdrawal deadline for first five week session and eight week session
Fri., June 23	Restricted complete withdrawal deadline for first five week session
Fri., June 30	First five week session ends
Mon., July 3	Instruction begins for second five week session
Tues., July 4	Classes are excused for Independence Day
Fri., July 7	August graduation filing deadline (must be met to have name appear in commencement program)
Mon., July 10	Unrestricted withdrawal deadline for second five week session
Fri., July 14	Restricted complete withdrawal deadline for eight week session
Fri., July 21	Eight week session ends
Fri., July 21	Restricted course withdrawal deadline for second five-week session
Fri., July 28	Restricted complete withdrawal deadline for second five week session
Thurs., Aug 3	Second five week session ends
Fri., Aug. 4	Commencement



# Frequently Asked Questions

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## **How do I apply to ASU Main?**

Complete an application and have all required transcripts and test scores sent directly to Undergraduate Admissions. See "Undergraduate Admission," page 60.

## **How do I apply to ASU East?**

Complete an application. Request all required transcripts and test scores be sent to Undergraduate Admissions. See "Undergraduate Admission," page 60. For more information, call 480 727 1142.

## **How do I apply to ASU West?**

Contact the Admissions and Records Office at ASU West. See "Admission and Advising," page 579. For more information, call 602/543 8123.

## **What is the ASU Extended Campus?**

The ASU Extended Campus offers courses evenings and weekends, by television, the Internet, on and off campus sites, and through Independent Learning. See "ASU Extended Campus," page 27, or call 480/965 3986 for information and a course catalog.

## **What if I am a transfer student?**

Upon admission, note the number of semester hours on your Certificate of Admission. When registering, consult your department advisor to determine how transfer credits fit into the curriculum (see "Academic Advising," page 71). Have you met the First Year Composition requirement (see "First Year Composition Requirement," page 81)? If you have completed 87 or more semester hours, file a program of study or declaration of graduation (see "Program of Study Requirements," page 83).

## **What if I have a disability or am a veteran?**

If you have a disability and will be requesting academic accommodations, see "Disability Resources for Students," page 43, and "Applicants with Disabilities," page 67. Veteran students using GI benefits, see "Veterans Services," page 40.

## **How do I get financial aid?**

In addition to applying for admission, complete the FAFSA before March 1. If you meet financial aid program criteria, you receive an award notification after April 15. See "Student Financial Assistance," page 40, and "Financial Aid," page 51.

## **How do I find a place to live and purchase a meal plan?**

Apply early (four to six months in advance of the semester). See "Residential Life," page 41, for information on student housing. Meal plans may be purchased in advance for ASU Main or upon arrival on campus. For more information about Main campus options, call Residential Life at 480/965 3515, and Campus Dining Services at 480 965 3464. For ASU East housing, call 480 727 1700, and for ASU East dining call 480 988 2903, or refer to "Campus and Student Services," page 542, in the "ASU East" section, for more information on dining and housing.

## **What about orientation?**

Attend ASU Main orientation, where questions regarding advisement, class registration, student IDs, on campus housing, and other pertinent topics are answered. See "Orientation," page 61. Information regarding ASU East orientation can be obtained by calling 480 727 1041.

## **How do I get an ID, and what about parking?**

See "Proof of Identification," page 72, about obtaining an ASU student ID card. If you are planning to park at ASU Main, purchase a parking decal. See "Parking Decals," page 48. Parking on ASU East campus is free. ASU East students may obtain student ID cards at the OASIS in the Center Building.

## **What about placement examinations and university testing requirements?**

See "Placement Examinations," page 70, and "University Testing Requirements," page 70.

## **Before I register for classes, how do I get an advisor?**

Call the college of your major to schedule an appointment with an academic advisor. See "Academic Advising," page 71. For ASU East Academic Advising, see page "Academic Advising," page 540.

## **When and how do I register?**

Refer to the *Schedule of Classes* for registration procedures and dates or access registration information online at [www.asu.edu/registrar](http://www.asu.edu/registrar). Remember that you must first provide proof of measles immunity to Student Health. See "Immunization Requirements," page 61.

## **Once I am registered and ready to go, how can I ensure my success at ASU?**

Consider enrolling in UNI 100 Academic Success at the University. See "Division of Undergraduate Academic Services," page 113.

## **Now that the business is over, what's left to do?**

Become involved in the university by getting to know professors, joining student organizations, and taking advantage of the myriad of cultural, recreational, and social opportunities. For more information on ASU Main campus life, call Student Life at 480 965 6547, REACH at 480/965 2255, or ASASU at 480 965 3161; for ASU East, call 480 727-3278. Investigate the challenges and advantages of the University Honors College. See the "University Honors College," page 316.

# Academic Definitions

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**Academic Renewal.** Under certain circumstances an under graduate who has been readmitted to the university after an absence of at least five years may have the former record treated in the same manner as transfer credits. See "Academic Renewal," page 71.

**Advanced Placement.** Students who have taken an advanced placement course of the College Entrance Examination Board (CEEB) in their secondary school and who have taken an Advanced Placement Examination of CEEB may receive university credit. See "Advanced Placement," page 67.

**AIECP.** The American English and Culture Program (AIECP) features an intensive course of study designed for adult international students who desire to become proficient in English as a second language. See "American English and Culture Program," pages 67 and 257.

**ASU East.** ASU East is located at the former Williams Air Force Base. See "ASU East," page 539.

**ASU Extended Campus.** The ASU Extended Campus offers courses evenings and weekends, by television, the Internet, at on- and off- campus sites, and through Independent Learning. See "ASU Extended Campus," page 27.

**ASU Main.** ASU Main is the principal campus of ASU, located in Tempe. See "ASU Main," page 27.

**ASU West.** ASU West is the Phoenix branch campus of ASU, established in 1984 by the Arizona Legislature to serve the educational needs of residents in western Maricopa County. See "ASU West," page 578.

**Audit Enrollment.** A student who audits a course attends regularly scheduled class sessions but earns no credit. See "Audit Enrollment," page 74.

**Buckley Amendment.** See "Family Educational Rights and Privacy Act" in this section.

**CLEP.** As part of the College Level Examination Program (CLEP), students who have taken a College Level Examination of the College Entrance Examination Board may receive university credit. See "College Level Examination Program," page 67.

**Comprehensive Exam.** A comprehensive examination is intended to permit a student to establish academic credit in a field in which the student has gained experience or competence equivalent to an established university course. See "Comprehensive Examinations," page 67.

**Concentration.** A concentration is a selection of courses within a major.

**Cooperative Education.** Cooperative Education is any educational program that requires alternating classroom and work experience in government or industry. The work experience exists for its educational value. See "Cooperative Programs," page 73.

**Corequisite.** A requirement to be met *while* taking one course, such as taking another particular course, is a corequisite. See "Prerequisite" in this section.

**Course Prefix.** The course prefix is the three letter designation assigned by each instruction unit. The "Course Prefix Index," page 6, provides a comprehensive list. Also see "Cross Listing" in this section.

**Credit Enrollment.** One semester hour represents a minimum of one 50 minute class exercise per week per semester. A minimum of 120 semester hours is required for graduation with a baccalaureate degree. To obtain credit, a student must be properly registered and pay fees for the course.

**Cross-Listing.** One course may have more than one course prefix and may be offered by more than one department. Some instruction units require students to enroll in a course under a certain prefix to receive credit properly. Catalog course descriptions indicate courses that are cross listed.

**Cum Laude.** An undergraduate student with a minimum of 60 semester hours of course work at ASU and a cumulative GPA of 3.40–3.59 graduates *cum laude*. See "General Graduation Information," page 84. Also see "Magna Cum Laude" and "Summa Cum Laude" in this section.

**Declaration of Graduation.** See "Program of Study" in this section.

**Drop/Add.** Drop add is a process in which a student who has registered for courses for a semester or summer session may drop or add courses through the first week of classes in a semester or the first two days of a summer session. See "Drop Add," page 75.

**Family Educational Rights and Privacy Act.** The Family Educational Rights and Privacy Act of 1974, or Buckley Amendment, sets forth the requirements governing the protection of the privacy of the education records of students who are or have been in attendance at ASU. See "Student Records," page 79.

**Freshman.** A student who has earned 24 or fewer hours is a freshman.

**General Studies Requirement.** This is a requirement of all undergraduates. See "General Studies Requirement," page 85.

**GPA.** The ASU grade point average (GPA) is obtained by dividing the total number of ASU grade points earned by the number of ASU semester hours graded. Grade point averages are rounded to the nearest hundredth of a grade point. See "Grade Point Average," page 76.

**Grade Points.** For the purpose of computing the GPA, grade points are assigned to each of the grades for each semester hour as follows: "A," four points; "B," three points; "C," two points; "D," one point; and "E," zero points.

**Graduate Catalog.** The *Graduate Catalog* describes the procedures and requirements for enrollment in the Graduate College. See "Graduate College," page 301.

**Graduate-Level Courses.** Courses numbered 500–799 are designed for graduate students. However, an upper division undergraduate student may enroll in graduate courses with the approval of his or her advisor, the course instructor, the department chair, and the dean of the college or school in which the course is offered. See "Course Numbering System," page 58.

**Incomplete.** A mark of "I" (incomplete) is given by the instructor only when a student who is otherwise doing acceptable work is unable to complete a course because of illness or other conditions beyond the student's control. See "Grading System," page 73.

**International Baccalaureate.** Students who have taken a higher level examination through the International Baccalaureate program may receive university credit. See "International Baccalaureate Diploma/Certificate," page 67.

**Junior.** A student who has earned 56–86 hours is a junior.

**Lower-Division Courses.** Courses numbered 100–299 are designed primarily for freshmen and sophomores. See "Course Numbering System," page 58.

**Magna Cum Laude.** A student with a minimum of 60 semester hours of course work at ASU and a cumulative GPA of 3.60–3.79 graduates *magna cum laude*. See also "Cum Laude" and "Summa Cum Laude" in this section.

**Major.** A major is a specialized group of courses contained within the program of study. Refer to college and school sections for specific descriptions and requirements.

**Minor.** A minor is a specialized group of courses contained within the program of study available from some instruction units. See "Minors," page 110, and refer to college and school sections for specific descriptions and requirements.

**Nonresident Tuition.** This term refers to the charge assessed to nonresident students, as established in Arizona Board of Regents' Policy 4-102. See also "Resident Tuition" in this section.

**Omnibus Course.** An omnibus course is offered on an experimental or tutorial basis when the course content is new or periodically changes. See "Omnibus Courses," page 58.

**Pass/Fail Enrollment.** A mark of "P" (pass) or "F" (fail) may be assigned for this grading option. This grading method may be used at the option of individual colleges and schools within the university. See "Pass/Fail Enrollment," page 75.

**Placement Examination.** A proficiency examination is given to waive a course requirement, validate certain transfer credits in professional programs, or determine a student's ability in a field where competence is an important consideration. See "Placement Examinations," page 70.

**Prerequisite.** A requirement to be met *before* registering for one course, such as completing another particular course, is a prerequisite. See also "Corequisite" in this section.

**Probation.** A student's college assumes responsibility for enforcing academic standards and may place any student on probation who has failed to maintain good standing. A student on academic probation is required to observe any rules or limitations the college may impose as a condition for retention. See "Probation," page 75.

**Program of Study.** The complete array of courses included in the study leading to a degree make up a student's program of study. A student must file an Undergraduate Program of Study or a Declaration of Graduation for graduation within the semester the student earns his or her 87th hour. See "Declaration of Graduation," page 83.

**Resident Tuition.** This term refers to the charge assessed to resident students who register for classes at ASU. See also "Nonresident Tuition" in this section.

**Restricted Complete Withdrawal.** From the fifth week to the transaction deadline for a semester and from the seventh day to the transaction deadline for a summer session, students may withdraw from all courses but receive a mark of "W" only from courses in which the instructor certifies that they are passing at the time of the withdrawal.

**Restricted Course Withdrawal.** From the fifth week to the end of the 10th week of a semester and from the seventh day to the end of the third week of a summer session, students may withdraw with a mark of "W" only from courses in which the instructor certifies that they are passing at the time of withdrawal. See "Restricted Withdrawal," page 75.

**Senior.** A student who has earned 87 or more hours of credit is a senior.

**Sophomore.** A student who has earned 25–55 hours of credit is a sophomore.

**Summa Cum Laude.** A student with a minimum of 60 semester hours of course work at ASU and a cumulative GPA of 3.80–4.00 graduates *summa cum laude*. See "Graduation with Academic Recognition," page 84. See also "Cum Laude" and "Magna Cum Laude" in this section.

**TOEFL.** The Test of English as a Foreign Language (TOEFL) is taken by students whose native language is not English. See "TOEFL," page 66, and "AECF" in this section.

**Transcript.** An official transcript lists in chronological order all courses taken at ASU. It includes all grades received. It is signed and dated by the Registrar and displays the embossed seal of the university. Official transcripts include all information shown on the official transcript, plus information concerning changes, additions, etc., to the record. See "Transcripts," page 77.

**Unrestricted Course Withdrawal.** During the first four weeks of a semester or the first six days of a summer session, a student may withdraw from any course with a mark of "W." See "Unrestricted Course Withdrawal," page 75.

**Upper-Division Courses.** Courses numbered 300–499 are designed primarily for juniors, seniors, and other advanced students. See "Course Numbering System," page 58.

# Accreditation and Affiliation

Arizona State University Main is accredited by the North Central Association (NCA) of Colleges and Secondary Schools. 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, divisions, and departments are accredited by, affiliated with, or members of national bodies as described in the "Academic Accreditation at ASU Main and East," "Academic Affiliation," and "Academic Membership" tables. 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 Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools. Professional programs in the various academic areas are accredited by national bodies as described in the "Academic Accreditation at ASU West" table, page 24.

## Academic Accreditation at ASU Main and East

Unit or Program	Accredited by
<b>College of Architecture and Environmental Design</b>	
B.S.D., Interior Design	Foundation for Interior Design Education Research
B.S.L.A.	Landscape Architectural Accreditation Board
M Arch	National Architectural Accrediting Board
M E P	Planning Accreditation Board
<b>College of Business</b>	
all programs	American Assembly of Collegiate Schools of Business
School of Accountancy and Information Management	American Assembly of Collegiate Schools of Business
School of Health Administration and Policy	Accrediting Commission on Education for Health Services Administration
<b>College of Education</b>	
M.C., Counseling	Council for Accreditation of Counseling and Related Educational Programs
Ph.D., Counseling Psychology, Ph.D., Educational Psychology with a concentration in school psychology	American Psychological Association
<b>College of Engineering and Applied Sciences</b>	
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; B.S.E., Bioengineering; B.S.E., Chemical Engineering; B.S.E., Civil Engineering; B.S.E., Computer Systems Engineering; B.S.E., Electrical Engineering; B.S.E., Industrial Engineering; B.S.E., Materials Science and Engineering; B.S.E., Mechanical Engineering	Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc.
<b>College of Fine Arts</b>	
Department of Theatre	National Association of Schools of Theatre
School of Music	National Association of Schools of Music
<b>College of Law</b>	
J.D.	American Bar Association and Association of American Law Schools
<b>College of Liberal Arts and Sciences</b>	
B.A., B.S., Family Resources and Human Development with a concentration in human nutrition—dietetics, M.S., Family Resources and Human Development with a concentration in general family resources and human development (human nutrition and foods area)	American Dietetic Association
B.S., Clinical Laboratory Sciences	National Accrediting Agency for Clinical Laboratory Sciences

## Academic Accreditation at ASU Main and East (continued)

Unit or Program	Accredited by
<b>College of Liberal Arts and Sciences (continued)</b>	
M.S., Communication Disorders	American Speech Language Hearing Association
Ph.D., Psychology with a concentration in clinical psychology	American Psychological Association
<b>College of Nursing</b>	
B.S.N., M.S., Nursing	Arizona Nurses Association (American Nurses Credentialing Center's Commission on Accreditation) Arizona State Board of Nursing National League for Nursing Commission on Collegiate Nursing Education (approved)
<b>College of Public Programs</b>	
B.S., Recreation	Council on Accreditation of the National Recreation and Park Association
Master of Public Administration	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
<b>College of Technology and Applied Sciences</b>	
B.S., Aeronautical Engineering Technology; B.S., Electronics Engineering Technology; B.S., Manufacturing Engineering Technology	Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc.
<b>School of Social Work</b>	
B.S.W., M.S.W.	Council on Social Work Education

## Academic Affiliation

Unit or Program	Affiliated with
<b>College of Architecture and Environmental Design</b>	
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 Society for Range Management Soil and Water Conservation Society Wildlife Society
<b>College of Education</b>	American Association of Colleges for Teacher Education American Educational Research Association University Council for Educational Administration

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**Academic Membership**


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<b>Unit or Program</b>	<b>Membership with</b>
<b>College of Education</b>	American Association of Colleges for Teacher Education University Council for Educational Administration
<b>College of Law</b>	Association of American Law Schools
<b>College of Liberal Arts and Sciences</b>	
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 Advancement of Science American Chemical Society
Department of Exercise Science and Physical Education	American Society for Advancement of Science American Alliance for Health, Physical Education, Recreation and Dance American College of Sports Medicine American Physical Society Arizona Society of Medical Technology Committee on Allied Health Education National Association for Physical Education in Higher Education North American Society for Sports History North American Society for Sports Psychology and Physical Activity
Department of Family Resources and Human Development	American Dietetic Association Development
Department of Geography	Association of American Geographers
Department of Geology	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 Institute of Historical Research
Department of Languages and Literatures	American Council on Teaching Foreign Language International Studies Association Modern Language Association
Department of Mathematics	American Mathematical Society Mathematical Association of America Rocky Mountain Mathematics Consortium Society for Industrial and Applied Mathematics
Department of Microbiology	American Society of Microbiology
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

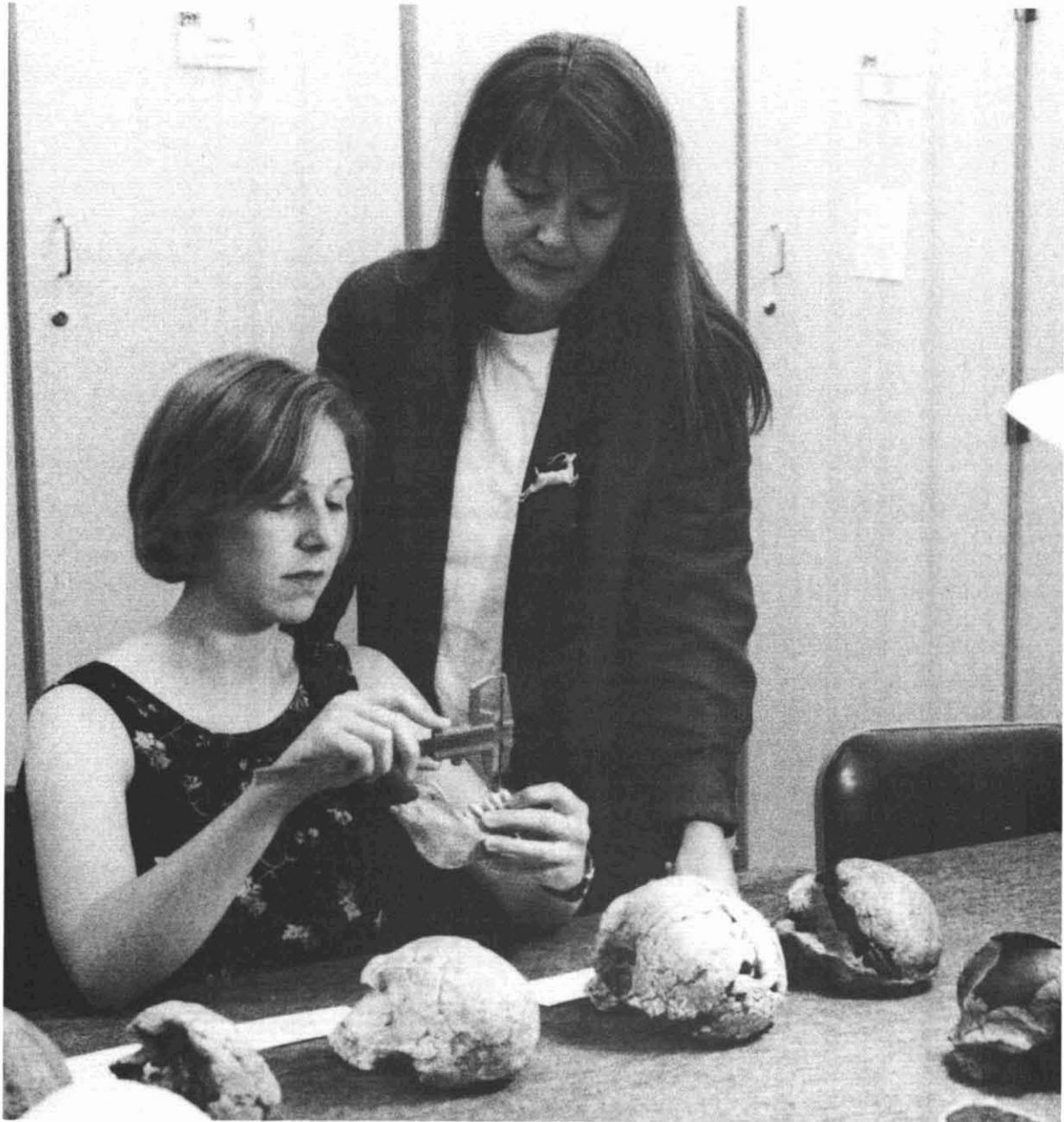
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## Academic Membership (continued)

Unit or Program	Membership with
Department of Plant Biology	American Institute of Biological Sciences American Society of Cell Biology American Society of Horticultural Science American Society of Photobiology American Society of Plant Physiologists American Society of Plant Taxonomy Arizona Nevada Academy of Science Botanical Society of America Botanical Society of Japan California Botanical Society Ecological Society of America International Association of Landscape Ecology International Association of Plant Taxonomy International Association for Study of Plant Succulents International Association of Wood Anatomists International Organization of Paleobotany International Photosynthesis 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 Phycological Society of America Phytochemical Society of North America Sigma Xi Soil Science Society of America
Department of Political Science	American Political Science Association Inter University Consortium for Political and Social Research American Society of Clinical Psychologists American Sociological Association Association for Women in Science National Women's Studies Association
Department of Psychology	
Department of Sociology	
Women's Studies Program	
<b>College of Nursing</b>	American Association of Colleges of Nursing Western Institute of Nursing
<b>College of Public Programs</b>	
Department of Communication	Speech Communication Association Western States Communication Association
Department of Recreation Management and Tourism	American Humanities Inc Arizona American Indian Tourism Association Arizona Heritage Alliance Arizona Park and Recreation Association Arizona State Therapeutic Association National Park and Recreation Association Travel Tourism Research Association
School of Justice Studies	Arizona Justice Educators Association of Criminal Justice Doctoral Programs National Academic Advising
School of Public Affairs	Onati International Institute for the Sociology of Law National Association of Schools of Public Affairs and Administration
Walter Cronkite School of Journalism and Telecommunication	Association of Schools of Journalism and Mass Communication Broadcast Education Association
<b>Graduate College</b>	Council of Graduate Schools
<b>University Honors College</b>	National Collegiate Honors Council

**Academic Accreditation at ASU West**

<b>Unit or Program</b>	<b>Accredited by</b>
<b>College of Human Services</b> Department of Recreation and Tourism Management Department of Social Work	National Recreation and Park Association/American Association for Leisure and Recreation Council on Social Work Education
<b>School of Management</b> all programs	American Assembly of Collegiate Schools of Business



Anthropology major Brandeis McBratney (left) measures a bone cast with Institute of Human Origins paleontologist Kaye Reed.

Tim Trumble photo



# General Information

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## MISSION

Arizona State University has emerged as a leading national and international research and teaching institution with a primary focus on Maricopa County, Arizona's dominant population center. This rapidly growing, multicampus public research university offers programs from the baccalaureate through the doctorate for approximately 49,000 full-time and part-time students through ASU Main in Tempe, ASU West in northwest Phoenix; a major educational center in downtown Phoenix; ASU East, located at the Williams Campus (formerly Williams Air Force Base) in southeast Mesa; and other instructional, research, and public service sites throughout Maricopa County. ASU is a modern university that applies its research capabilities to the rapidly evolving needs of Maricopa County and the state.

As a leading public university, Arizona State University's goal is to become a world-class university in a multicampus setting, one of the very best public universities in the nation. The university's mission is to provide outstanding programs in instruction, research, and creative activity; to promote and support economic development; and to provide service appropriate for the nation, the state of Arizona, and the state's major metropolitan area. To fulfill its mission, ASU places special emphasis on the core disciplines and offers a full range of degree programs—baccalaureate through doctorate. To become competitive with the very best public universities, the institution recognizes that it must offer quality programs at all degree levels in a broad range of fundamental fields of inquiry. ASU will continue to dedicate itself to superior instruction, to excellent student performance, to original research, creative endeavor, and scholarly achievement, and to outstanding public service and economic development activities. As a result of this dedication, ASU was awarded the prestigious Research University status in 1994, recognizing ASU as a premier research institution.

## ORGANIZATION

Arizona State University is part of a university system governed by the Arizona Board of Regents, a body with perpetual succession under the constitution and laws of Arizona. The board consists of eight citizens appointed by the governor of the state for terms of eight years, and one student regent serving for one year with the elected governor and state superintendent of public instruction as members ex officio.

The regents select and appoint the president of the university, who is the liaison between the Arizona Board of Regents and the institution. The president is aided in the administrative work of the institution by the senior vice president and provost, other provosts, vice presidents, deans, directors, department chairs, faculty, and other officers. See "Academic Organization," page 8, and "Administrative Personnel," page 533.

The academic units develop and implement the teaching, research, and service programs of the university, aided by the university libraries, museums, and other services.

The faculty and students of the university play an important role in educational policy, with an Academic Senate,

joint university committees and boards, and the Associated Students serving the needs of a large institution.

## EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION

It is the policy of ASU to provide equal opportunity through affirmative action in employment and educational programs and activities. Discrimination is prohibited on the basis of race, color, religion, national origin, citizenship, sex, sexual orientation, age, disability, special disabled veteran or Vietnam era veteran status. Equal employment opportunity includes but is not limited to recruitment, hiring, promotion, termination, compensation, benefits, transfers, university sponsored training, education, tuition assistance, and social and recreational programs.

ASU is committed to taking affirmative action in increasing opportunities at all levels of employment and to increasing participation in programs and activities by all faculty, staff, and students. Affirmative action is directed toward minority persons, women, special disabled veterans, Vietnam era veterans, and persons with disabilities.

### University Policy Prohibiting Discriminatory Harassment

**Harassment Prohibited.** Subject to the limiting provisions of "Freedom of Speech and Academic Freedom" specified below, it is a violation of university policy for any university employee or student to subject any person to harassment on university property or at a university-sponsored activity.

**Harassment Defined.** Actions constitute harassment if 1) they substantially interfere with another's educational or employment opportunities, peaceful enjoyment of residence, physical security, and 2) they are taken with a general intent to enrage in the actions and with the knowledge that the actions are likely to substantially interfere with a protected interest identified above. Such intent and knowledge may be inferred from all the circumstances.

**Freedom of Speech and Academic Freedom.** Neither this nor any other university policy is violated by actions that amount to expression protected by the state or federal constitutions or by related principles of academic freedom. This limitation is further described in the ASU First Amendment Guidelines, the current version of which supplements this policy and is available in the Office of General Counsel.

**Relationship to the Work of the Campus Environment Team.** If harassment is discriminatory, it falls within the education, reporting, reporting, and referral functions of the Campus Environment Team. Harassment is discriminatory if taken with the purpose or effect of differentiating on the basis of another person's race, sex, color, national origin, religion, age, sexual orientation, disability, or Vietnam era veteran status.

## INTERGROUP RELATIONS CENTER

The Intergroup Relations Center provides opportunities for students, faculty, and staff to get involved in programs,

workshops, activities, and events designed to educate about and improve relations among many different groups at ASU. The center is well known for presenting programs and workshops that are innovative, nondefensive, and educational and that are inclusive of many groups.

The center sponsors the Voices of Discovery Program, which consists of more than 10 small intergroup dialogues between different student groups. Examples of the different groups include a Latino/white dialogue group; an African American/white group; a female/male group, an American Indian/white group; a heterosexual/gay, lesbian, bisexual group; a Jewish Christian dialogue group, an Asian/white group; and a persons with disabilities/able bodied group. Each group meets for two hours per week for six weeks to have discussions about race, ethnicity, class, gender, sexual orientation, and other intergroup issues all designed to increase understanding and relations between groups. Students receive credit through courses for participating in the program.

The center also sponsors Leadership 2000, a four day training retreat that takes place once a year and involves about 80 ASU students from many backgrounds. Leadership 2000 takes place in the mountains near Prescott, Arizona, and trains students to understand and address issues of leadership, culture, cross cultural communication, stereotyping, intergroup cooperation and friendship, identity development, prejudice, and discrimination.

## HISTORY OF ARIZONA STATE UNIVERSITY

On February 26, 1885, House Bill 164, "An Act to Establish a Normal School in the Territory of Arizona," was introduced in the 13th Legislative Assembly of Arizona Territory by John Samuel Armstrong. The bill, strongly supported by Charles Trumbull Hayden of Tempe, passed the House on March 6 and the Council on March 11 and was signed by Governor F.A. Tittle on March 12, 1885, thereby founding the institution known today as Arizona State University. Under the supervision of Principal Hiram Bradford Farmer, instruction was instituted on February 8, 1886, when 33 students met in a single room on land donated by George and Martha Wilson of Tempe.

The institution began with the broad obligation to provide "instruction of persons... in the art of teaching and in all the various branches that pertain to good common school education; also, to give instruction in the mechanical arts and in husbandry and agricultural chemistry, the fundamental law of the United States, and in what regards the rights and duties of citizens."

With the growth of the state, especially the surrounding Phoenix metropolitan area, the school has carried forward this charter, accompanied by successive changes in scope, name, and governance.

**The Early Years.** For the first 14 years, the school was governed by six principals. At the turn of the century and with another new name, Normal School of Arizona, President Arthur John Matthews brought a 30 year tenure of progress to the school.

He assisted in changing the school to an all college student status, the Normal School had enlisted high school students who had no other secondary educational facilities in Arizona. He embarked on a building schedule that included the state's first dormitories. Of the 18 buildings constructed

while Matthews was president, six are still in use. His legacy of an "evergreen campus," with the import of many shrubs and trees and the planting of Palm Walk, continues to this day: the main campus is a nationally recognized arboretum.

Matthews also saw to it that the Normal School was accredited outside the state. His service on national education organization boards was conducive to this recognition. The school remained a teacher's college in fact and theory during Matthews' tenure, although the struggle to attain status as a university was ongoing.

An extraordinary event occurred March 20, 1911, when former President Theodore Roosevelt visited the Tempe school and spoke from the steps of Old Main. He had dedicated the Roosevelt Dam the day before and was impressed with Arizona. He noted that construction of the dam would benefit central Arizona's growth and that of the Normal School. It would be another year before the territory became a state.

During the Great Depression, Ralph W. Swetman was hired as president for a three year term. This was a time of uncertainty for educational institutions. Although enrollment increased due to the depression, many faculty were terminated and faculty salaries were cut. The North Central Association became the accrediting agency for Arizona State Teachers College.

**The Gammage Years.** In 1933, Grady Gammage, then president of Arizona State Teachers College at Flagstaff, became president of Arizona State Teachers College at Tempe, a tenure that would last for nearly 28 years.

On March 8, 1945, the three state institutions of higher learning came under the authority of one Arizona Board of Regents, which oversees ASU today.

The phenomenal growth of the college began after the end of World War II. Dr. Gammage had foreseen that the G.I. Bill of Rights would flood campuses everywhere with returning veterans. Many of the veterans who had received military training in Arizona had fallen in love with the state and vowed to return after the war. The numbers within one year were staggering in the fall semester of 1945 553 students were enrolled; over the weekend semester break in January 1946, enrollment increased 110% to 1,163 students. Successive semesters saw continuing increased enrollment.

Like his predecessor, Dr. Gammage oversaw the construction of a number of buildings. His greatest dream, that of a great auditorium, came five years after his death. He laid the groundwork for it with Frank Lloyd Wright, who designed what is now the university's hallmark building, Grady Gammage Memorial Auditorium, built in 1964

**Years of Growth and Stature.** During the 1960s, with the presidency of Dr. G. Homer Durham, Arizona State University began its academic rise with the establishment of several new colleges (the College of Fine Arts, the College of Law, the College of Nursing, and the School of Social Work) and the reorganization of what became the College of Liberal Arts and Sciences and the College of Engineering and Applied Sciences. Perhaps most important, the university gained the authority to award the Doctor of Philosophy and other doctoral degrees.

The next three presidents—Harry K. Newburn, 1969-71, John W. Schwada, 1971-81, and J. Russell Nelson, 1981-89—and Interim President Richard Peck, 1989, led the uni-

versity to increased academic stature, expansion of the campuses, and rising enrollment. With approximately 49,000 students, ASU is the fourth largest university in the nation.

On January 1, 1990, Dr. Lattie F. Coor, a native Arizonan, became 15th in the institution's succession of principals and presidents. He has highlighted undergraduate education, research, cultural diversity, and economic development as the "four pillars" of the university's agenda. He has taken steps in these areas by further defining the role of ASU West and by initiating the establishment of ASU East.

In 1996, "The University for the Next Century" initiative, involving campus and community members, developed a set of general goals to guide the university at the turn of the millennium. By making selective investments in people, programs, and new practices, ASU will be a prototype of the major metropolitan research university of the future that is technologically sophisticated in linking its students, faculty, staff, and alumni to the larger issues of society.

**Research I Status.** ASU was named a Research I university by the Carnegie Foundation for the Advancement of Teaching in early 1994. Nationally, 88 universities have been granted this status, indicating successful garnering of support for research projects and educating future scientists.

### Athletics

The original nickname for the Normal School of Arizona athletic teams was the Owls. Athletics other than Sunday hikes and lawn tennis were not part of the early curriculum.

During President Matthews' tenure, some team competition began. The Tempe Bulldogs saw some interesting and rough competition with the University of Arizona Wildcats (almost always on the losing end), but usually they competed against smaller schools around the state.

Dr. Gammage realized that athletics was a way to garner monetary support from the community. With the establishment of the Sun Angel Foundation in 1946, a new era began. The college's teams became the Sun Devils and, with a succession of fine coaches and an increasingly strong commitment to sports, became known worldwide. Today the university attracts students from throughout the world to its athletic programs.

In 1979, the university joined the Pacific 10 Conference. In 1987, ASU became the first Arizona football team to play in the Rose Bowl, defeating the University of Michigan Wolverines 22-15. ASU made its second appearance in 1997 against Ohio State.

In 1998, Arizona State University finished 12th nationally in the Sears Directors' Cup which recognizes the top athletic programs in the country. The women's golf team won its fifth NCAA championship in six years in 1998. Also in 1998, the ASU baseball team reached the College World Series Championship Game for the 10th time in its history.

### UNIVERSITY CAMPUSES AND SITES

**ASU Main.** ASU Main is located near the heart of metropolitan Phoenix in the city of Tempe (population 160,000). Nearby are the municipalities that make up the fast growing Valley of the Sun: Chandler, Gilbert, Glendale, Mesa, Scottsdale, and other communities.

ASU Main comprises more than 700 acres and offers outstanding physical facilities to support the university's educational programs. Buildings are modern and attractively designed.

Broad pedestrian malls laid out in an easy to follow grid plan, bicycle lanes connecting all parts of the university, and spacious lawns and subtropical landscaping characterize a campus serving the physical, aesthetic, and educational needs of students, faculty, and staff.

**ASU East.** The university's third campus, ASU East, opened at the Williams Campus in the fall of 1996. Approximately 1,100 students are enrolled in degree programs offered by the College of Technology and Applied Sciences and Morrison School of Agribusiness and Resource Management, programs offered at no other Arizona campus. In 1997, East College was created to provide support courses for existing programs and to generate new degree programs at ASU East.

ASU East has joined with Chandler Gilbert Community College (CGCC) in the New Partnership in Baccalaureate Education that allows students to graduate in four years with an ASU baccalaureate degree earned entirely at the Williams Campus, at some savings in tuition.

The campus includes excellent educational facilities and unique residential opportunities, including a choice of traditional residence halls or two to five bedroom homes.

ASU East is a student centered campus that offers many of the features of a small college in a rural area while providing access to the resources of a major research university and the amenities of a large metropolitan area. A shuttle service provides transportation between ASU East and ASU Main. The 600 acre ASU East campus is easily accessible via major interstate routes. For more information, see "ASU East," page 539.

**ASU West.** ASU West is a campus of Arizona State University that offers upper division undergraduate and graduate programs in the arts and sciences and in selected professional fields.

The campus is located between 43rd and 51st Avenues on West Thunderbird Road in Phoenix. Immediately west of the campus is the city of Glendale. The core campus was completed in March 1991 and includes the Fletcher Library, the Sands Classroom Building, the Laboratory/Computer Classroom Building, the Faculty and Administration Building, Kiva Lecture Hall, and the University Center Building.

For more information, see "ASU West," page 578. For complete information and course listings, see the *ASU West 1999-2000 Catalog*.

**ASU Extended Campus.** The ASU Extended Campus ([www.asu.edu/xed](http://www.asu.edu/xed)) goes beyond the boundaries of the university's three physical campuses to provide access to 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 Extended Campus offers programs in partnership with the campuses and colleges of ASU, including a variety of professional continuing education programs. The ASU Downtown Center is the anchor location of the Extended Campus. Lifelong learning opportunities are offered to students of all ages throughout Maricopa County and the state of Arizona through the Extended Campus.

**ASU Downtown Center.** Located in downtown Phoenix, 502 E. Monroe, the ASU Downtown Center offers a variety of

daytime and evening courses of interest to employees in private businesses and government agencies and to individuals seeking personal growth and enrichment. These courses are scheduled at a variety of convenient times and offered through various modes of delivery. In addition, computer technology classes are taught during daytime, evening, and weekend hours, and computer certificates are offered. Professional continuing education, certificate programs and lecture series are also available. Access to ASU library information and resources, the ASU mainframe, and the Internet is available through the center's computer lab.

For more information, see "ASU Downtown Center," page 258.

**ASU Research Park.** The mission of the ASU Research Park ([www.asu.edu/researchpark](http://www.asu.edu/researchpark)) is to enhance Arizona's high value research based economic development and to build the university's capacity to educate and advance knowledge. To this end, the Research Park serves to attract to Arizona new corporate and regional headquarters and research and development firms that broaden the base for potential research among ASU departments, interact with graduate students, consult with university faculty, cosponsor seminars on research topics, and provide employment opportunities for graduates of ASU.

The Research Park has major tenants, including ASM Lithography, CytocFiberite, Iridium North America, Motorola Flat Panel Display, Motorola University, National Association of Purchasing Management, PKS Information Services, VLSI, and Walgreens Healthcare Plus. There is also a 50,000 square foot multitenant building developed by Transamerica Corporation, and the Lakeside Technology Center, a 44,000 square foot multitenant building developed by Price Elliot Research Park, Inc. The Research Park contributes to ASU's standing as a major research university.

**Camp Tontozona.** Located in the famed Mogollon Rim country near Kohl's Ranch, northeast of Payson, this continuing education facility of the university serves the needs of academic departments conducting teaching and research in mountain terrain. The camp is also available to faculty staff, graduate students, and alumni for family use. For more information, call 480 965 6851.

**Deer Valley Rock Art Center.** Deer Valley Rock Art Center, located two miles west of the Black Canyon Freeway on Deer Valley Road, is operated by the ASU Department of Anthropology in consultation with the Hopi, Yavapai, and Gila River Indian tribes. It includes more than 1,500 petroglyphs that cover the eastern slope of Hedgpeth Hills. For more information, call 480 582 8007.

**The Arboretum.** The Arboretum at Arizona State University is a flourishing oasis of plants from around the world. Dedicated on November 20, 1990, this virtual outdoor classroom includes 162 species varieties of trees and 172 species varieties of other woody ornamental and herbaceous plants from diverse geographic regions as well as the Sonoran Desert. It contains one of the best collections of palms and conifers in the desert Southwest and a growing collection of native Southwestern plants.

The Arboretum actually began with Arthur J. Matthews. By the time Matthews' 30 year reign as president was finished, nearly 1,500 trees of 57 varieties and more than 5,700

feet of hedges were planted. One of his most enduring landscape projects was the planting of Palm Walk in 1916, which extends from University Drive south to Orange Mall.

Several Arboretum walking tours are designated on campus, including the historic north campus tour, the green trail tour, and the red trail tour.

## UNIVERSITY LIBRARIES AND COLLECTIONS

The collections of the university's libraries comprise more than 3 million volumes, approximately 6.8 million microform units, and more than 36,000 periodical and serial subscriptions. Computer access to commercially and locally produced databases and the ability to borrow research materials from other libraries enhance local resources. ASU is a member of the Association of Research Libraries and the Center for Research Libraries.

For telephone numbers, see the "ASU Main Directory," page 477.

**Charles Trumbull Hayden Library.** The Charles Trumbull Hayden Library, designed by Weaver and Drover in 1966, houses the largest multidisciplinary collection. In addition to the open stack areas, separate collections and service areas include Current Periodicals and Microforms; Government Documents, Interlibrary Loan and Document Delivery Services; Labriola National American Indian Data Center; Library Instruction, Systems, and Technology (L.I.S.T.); Reference, Reserve, Special Collections, and Archives and Manuscripts, which includes the Arizona Collection, the Chicano Research Collection, and the Visual Literacy Collection.

Specialized collections include comprehensive holdings of the Pre Raphaelite period, a 14th century manuscript on algebra, the child drama collection, the Thomas Mosher collection, the William S. Burroughs collection, and the papers of several major Arizona political figures.

**Architecture and Environmental Design Library.** The Architecture and Environmental Design Library, located in the College of Architecture and Environmental Design/North building, contains books and periodicals pertinent to areas of study within the college. See "Architecture and Environmental Design Library," page 116, for more information.

**Arizona Historical Foundation Library.** Under a cooperative agreement with ASU, the Arizona Historical Foundation houses a library of several thousand volumes, manuscript collections, maps, and photographs, and a large collection of audio visual materials. Housed in the Charles Trumbull Hayden Library, the collection's focus is on the history of Arizona and the Southwest.

**Fletcher Library.** Located at the ASU West campus, Fletcher Library utilizes a range of electronic systems, from compact discs to telecommunications networks, to provide access to resources and delivery of materials. Its holdings include more than 31,000 volumes, 3,000 serial subscriptions, and 1.4 million microfilm selected to complement ASU West course offerings.

**Law Library.** The John J. Ross William C. Blakey Law Library is located on McAllister Avenue. See "Organization," page 320, for more information.

**Music Library.** A large collection of music scores, recordings, books, music reference materials, and listening facilities for individuals and groups are located on the third floor of the Music Building, West Wing.

**Daniel E. Noble Science and Engineering Library.** The Daniel E. Noble Science and Engineering Library houses books, journals, and microforms in the sciences and engineering, the Map Collection, and the U.S. Patent and Trade Mark Depository.

**University Archives.** The University Archives collection (1885 present) of university theses and dissertations, administrative records of the university, historical photographs and personal papers of faculty, staff, and alumni as well as student, faculty, and official university publications are available for use at the Luhrs Reading Room in Hayden Library. The historic University Archives Building on Tyler Mall is the home of the 1907 Gallery, which hosts exhibits of historical photographs from the collections of the Department of Archives and Manuscripts.

## PERFORMING AND FINE ARTS FACILITIES

**ASU Art Museum.** The ASU Art Museum serves students and scholars within and beyond the university and as a cultural resource for the Phoenix Metropolitan area. Additionally, the museum serves a public beyond the immediate area through traveling exhibitions and publications that not only document the exhibitions but also offer critical insight into the museum's areas of concentration.

Exhibitions, education programs, and publications are both interdisciplinary and educational and designed to engage viewers with art that is relevant to their lives. New technologies in the content of art and in the approaches to reaching new audiences are eagerly and openly adopted.

Collections and exhibitions focus on contemporary art, particularly new media and new methods of presentation; art by Latin American artists; art from the Southwest, prints, both historic and contemporary; and crafts, emphasizing American ceramics. The museum was founded by a gift of historic American paintings, which are on continuous display, including works by Gilbert Stuart, Albert Pinkham Ryder, Winslow Homer, Georgia O'Keeffe and Romare Bearden. The contemporary art holdings include works by Nam June Paik, Lorna Simpson, Vernon Fisher, Sue Coe, and Enrique Chagoya. Exhibitions and collections are housed in galleries and study rooms in two facilities: the international award winning Nelson Fine Arts Center and Matthews Center in the middle of campus.

Educational programs include artist residencies and dialogues with classes, student docent program, internships and research assistanceships, lectures and symposia, in-gallery materials, special curricula based school programs, school and public tours. For information on upcoming exhibitions and programs, call 480/965 2787.

**Computing Commons Gallery.** One of the unique features of the Computing Commons building is an art gallery, located off the main lobby in the northwest corner of the building. The gallery has design features that are unique for showcasing technology based artwork and displays. The Computing Commons gallery can support display of national online computer art networks (e.g., via Internet) and holographic displays, as well as more traditional two

dimensional graphic presentations. This is an exciting decade for the arts as new technology based tools and techniques open new avenues for creativity, as demonstrated by the exhibits in the Computing Commons Gallery.

**Dance Studio Theatre.** Located in the Physical Education Building East, the Dance Studio Theatre is a 6,000 square foot dance studio that also serves as a proscenium style performance space. The 300 seat theatre is devoted to informal and formal showcases of student and faculty choreographic work.

**Drama City.** Housed in a 50 year old former church, Drama City is the primary performance venue for the Institute for Studies in the Arts. The space is a black box, 60 by 30 feet with fixed lighting positions and flexible control stations. The area can seat up to 100 and is equipped for performance or installation pieces. The facility also houses a wide range of technology for performance and presentation including video projection, automated luminaires, and a unique computerized control system for integrated media usage.

**Gallery of Design.** Housed in the College of Architecture and Environmental Design, the Gallery of Design features traveling exhibitions on design and urban issues.

**Paul V. Galvin Playhouse.** Built to stage the largest productions of the ASU Theatre, the Paul V. Galvin Playhouse is a 496 seat proscenium stage theatre set at the east end of the Nelson Fine Arts Center. The Department of Theatre's annual season of 12 to 15 plays also includes productions in the Lyceum and Prism theatres and the Fine Arts Center Studios.

**Grady Gammage Memorial Auditorium.** A versatile center for the performing arts designed by Frank Lloyd Wright and named for the late President Grady Gammage, Grady Gammage Memorial Auditorium seats 3,000 and has won wide acclaim for its design and acoustics. In addition to the great hall and related facilities including the Aeolian Skinner organ contributed by Hugh W. and Barbara V. Long, the building contains classrooms and workshops for the College of Fine Arts.

**The Intelligent Stage.** The Intelligent Stage is a production and performance facility designed to explore the possibilities of interactive stage performance. The facility includes a sprung floor; 30 dimmers and a four channel sound system; a composer workstation; workstations for designing interactive MIDI performances; and a movement sensing, image processing workstation. All are networked together for multi-machine performance and production. Resident artists and technologists provide design and logistical support for projects in the facility.

**Katzin Concert Hall.** Located in the new music building expansion, the Katzin Concert Hall seats 350 people. Primarily used for solo and chamber music recitals, the hall houses a nine foot Hamburg concert Steinway piano. The acoustics are enhanced by the maple paneled stage and the multifaceted walls and ceiling.

**Louise Lincoln Kerr Cultural Center.** Located in Scottsdale, the Louise Lincoln Kerr Cultural Center offers cultural events, especially in the performing arts, to the community.

**Lyceum Theatre.** A small but technically sophisticated 164-seat proscenium-theatre, the Lyceum Theatre is a theatre laboratory devoted to the work of student playwrights, directors, and actors.

**Music Theatre.** As part of the music complex, the Music Theatre, modeled after the Wagnerian Theatre in Bayreuth, Germany, rises five stories and seats an audience of 500. This theatre is the home of many opera and musical productions.

**J. Russell and Bonita Nelson Fine Arts Center.** Designed by Albuquerque architect Antoine Predock, the J. Russell and Bonita Nelson Fine Arts Center is a spectacular, 119,000-square-foot village-like aggregate of buildings that includes five galleries of the ASU Art Museum, the Paul V. Galvin Playhouse, the University Dance Laboratory, seven specialized theatre and dance studios, a video studio, and a variety of scenic outdoor features, including courtyards, fountains, pools, and a 50-by-100-foot projection wall designed for outdoor video.

**Northlight Gallery.** The Northlight Gallery is dedicated to museum-quality exhibitions of historical and contemporary photography. Located in Matthews Hall, it is open during the academic year.

**Organ Hall.** Located in the new music building expansion, the Organ Hall houses the Fritts Organ. This tracker-action

pipe organ is designed to capture the qualities of baroque European organs. The hall is designed to complement the organ with a barrel-vaulted ceiling and wooden benches to seat 175 persons.

**Prism Theatre.** The Prism Theatre is an alternative black box space devoted to multiethnic, experimental works and second stage productions.

**Recital Hall.** Located on the fifth floor of the music building, the Recital Hall is an intimate 125-seat facility that opens onto a rooftop courtyard.

**Sundome Center for the Performing Arts.** As America's largest single-level theatre, the Sundome Center for the Performing Arts in Sun City West has 7,169 seats. The theatre is equipped with sophisticated and state-of-the-art lighting systems, and a single-span roof affords each seat a clear view. As one of Arizona's premier entertainment venues, the Sundome provides a varied array of top entertainment from Las Vegas concerts to classical ballets to celebrity lectures.

**Television Station KAET.** KAET, Channel 8, is the university's PBS station. Studios of the award-winning station are located in the Stauffer Communication Arts Building. To operate 24 hours a day, KAET employs more than 50 ASU students and interns. To learn more about KAET-TV, visit its Web site at [www.kaet.asu.edu](http://www.kaet.asu.edu) or call 480/965-3506.



Ben Avechuco mans the control booth at KAET television studio. KAET, channel 8, is the university's PBS station.

John Phillips photo

**University Dance Laboratory.** A flexible performance space within the Nelson Fine Arts Center, the University Dance Laboratory is designed specifically for experimental dance productions. Along with the Dance Studio Theatre in the Physical Education Building East, the University Dance Laboratory is used by the Department of Dance for experimental performances.

**Harry Wood Gallery.** Housed in the Art Building (ART 120), the Harry Wood Gallery provides temporary exhibitions of the visual arts during the academic year.

## COMPUTING FACILITIES AND SERVICES

Computers are fundamental tools for research, instruction, and learning in every college and department at ASU. The Information Technology (IT) department provides a variety of computing equipment and services available for use by students, faculty, and staff.

IT also provides programming, statistical, graphics, and other applications for microcomputers and mainframe computing systems. University wide electronic mail and the library's online catalog are accessible through a high speed communications network from many campus sites and offices, and off campus via a telephone connection. Communication with other research facilities is possible through the Internet.

A wide range of information on campus activities and related topics is available online. Faculty, staff, and students can access the ASU Web site at [www.asu.edu](http://www.asu.edu). This site contains information from various colleges, departments, and organizations; currently approved courses; the *Schedule of Classes*; the general and graduate catalogs; a phone and electronic mail directory; the athletic calendar of events; application forms; financial aid information; and much more.

IT provides several service centers, described below, for the ASU academic community.

**Computing Commons.** The Computing Commons building (CPCOM) opened at the beginning of the 1993 fall semester. Designed in 1990, the Computing Commons provides a "technology hub" that draws together students, faculty, and staff from all disciplines on campus in an environment which fosters maximum interaction. The building and its facilities have drawn national recognition and acclaim as a model facility for the support of instruction and research in a technology based environment. The Computing Commons houses a 225 workstation computing site, nine electronic classrooms, a Visualization Center, the Customer Assistance Center, a computer store, and a technology based art gallery.

**Computing Sites.** In addition to the Computing Commons computer site, there are four additional sites located on the ASU Main Campus. These sites are available for ASU faculty, staff, and students with an ASURITE user ID. Site configurations and hours of operation vary. Refer to [www.asu.edu/it/ty1/student/compsite.html](http://www.asu.edu/it/ty1/student/compsite.html) for current information.

**Computer Accounts.** The Computer Accounts Office, located on the first floor of the Computing Commons in room 105, offers access to a wide variety of computer services. These services are available to all students, faculty and staff who need to use the computing systems for aca-

dem or administrative purposes. To use these services, you need a user ID and password. Refer to [www.asu.edu](http://www.asu.edu) computer accounts for information about obtaining a computer account.

**Customer Assistance Center.** The Customer Assistance Center, located on the second floor of the Computing Commons in room 202, offers a library of reference manuals, computing periodicals, and other information concerning computing systems and software. Self paced training is available for various software applications running DOS, Windows, Macintosh, Unix, or mainframe operating systems. The Customer Assistance Center also distributes communication, virus protection, and other site license software as well as site specific documentation in a "print on demand" environment. Print on demand is also available at [www.asu.edu/it/ty1/document](http://www.asu.edu/it/ty1/document).

**Help Desk/Consulting.** The Information Technology Help Desk provides ASU customers with centralized systems information and first level assistance in resolving computing problems. Services are available through 480/965-6500, [www.asu.edu/helpdesk](http://www.asu.edu/helpdesk), and walk in consulting at the Customer Assistance Center, CPCOM 202. The Help Desk assists with data recovery/repair, Web page AFS permissions and file/directories, communication, e mail, and virus protection software, computing and equipment problem referral.

**Instructional Support.** Instruction Support ([is.asu.edu](http://is.asu.edu)) serves as a development center for the design and delivery of instruction utilizing technology. The Instruction Support Group is composed of interrelated units under which a wide range of talent and expertise is centrally available. Students, faculty, and researchers skilled in the areas of system design, graphics, interactive software, networked delivery, and digital video staff Instruction Support. The group facilitates the development of instruction within the realm of currently available technology and extends the potential to drive innovation and development. From this perspective, Instruction Support takes on the flavors of a research and development unit, a production group, a training facility, and an incubator for technological innovation.

The Instruction Support Group works in collaboration with faculty in the coordination of cross disciplinary research and production projects relating to the integration of technology with education. Through partnerships with faculty and groups outside ASU, grant writing teams are able to leverage support that may not otherwise be attainable by a single academic unit or faculty member. Central to effective support service is the establishment of a partnership among the various support units within the university. Instruction Support coordinates the efforts of groups, which include the College of Extended Education, University Libraries, Disabled Student Resources, and the Office of Research and Creative Activities, to provide faculty with a wide array of support services.

Instruction Support offers consultation sessions tailored toward enhancing the instructional use of technology by the university teaching community. Sessions range from an introduction to technology in education through advanced and customized approaches for instructors in specific programs.



**Instruction Support (IS) Lab.** The IS Lab provides an environment in which faculty may seek and receive one on one, guided or independent support for course development and delivery. Expert staff work closely with faculty to refine and develop their skill and confidence in the design and delivery of instruction through a variety of technology supported means, including synchronous and asynchronous learning. Located on the second floor of the Computing Commons, the IS Lab provides faculty, university professionals, and graduate students with a unique opportunity to integrate technology with instruction. The IS Lab sponsors workshops and demonstrations, and serves as a dynamic clearinghouse of information and referrals for effective integration of technology with education.

**Research Support.** Research Support ([www.asu.edu/it/irs/](http://www.asu.edu/it/irs/)) provides assistance to faculty, staff, and student researchers in both scientific and creative endeavors. Research Support encompasses both processing and operations. Processing involves consulting in the use of software tools and program coding directly related to projects or specific research. Operational activities support overall work flow of university computing facilities. Activities include consulting for computation, statistics, visualization, and geographical information system platforms in conjunction with software package installation/use, media conversion, and product evaluation.

A variety of computation facilities are provided in support of research and creative endeavors within the ASU community. Computing facilities range from individual workstations to SMP/MPP servers and mainframes. Extended computer capabilities are available through access to national computing centers.

**Geographic Information Systems (GIS) Lab and Visualization Center.** The GIS Lab and Visualization Center both seek to establish partnerships with faculty, staff, and students to acquire, create, and enhance research and creative endeavors through the effective use of Visualization and GIS technologies.

The Visualization Center is located on the second floor of the Computing Commons in room 235. The center offers faculty, staff, and graduate students hardware and application software resources and services for high level graphics and visualization used in research. Researchers can receive assistance ranging from interactive viewing of scientific data to visualization from both the Liberal and the Performing Arts and other visually related endeavors. The Visualization Center serves as a focal point for developing technologies in software, hardware, and communications.

The GIS Lab staff assists researchers with hardware and software and data to facilitate the creation of geographic information systems for spatial analysis, query, and display. The lab supports research from various disciplines and provides additional resources to students who are enrolled in classes for GIS instruction. The GIS Lab, also located in Computing Commons 235 serves as a focal point for GIS users to meet and share information and technical expertise.

## ALUMNI ASSOCIATION

Founded in 1894, the Alumni Association is a volunteer led organization committed to serve and unite alumni for the purpose of advancing the interests of Arizona State University and its alumni. The association provides a variety of

services for ASU alumni as well as a series of events scheduled around the country.

With more than 200,000 alumni living in every state and throughout the world, the association plays an important role as the university's primary support organization. Comprising more than 40 groups, the campus, college, club, and chapter organizations (4Cs) of the association provide opportunities for all alumni to stay involved with the part of ASU that interests them most.

Members of the ASU Alumni Association Board of Directors are elected each spring.

The association's professional staff is led by Executive Director Susan Clouse Dolbert.

For information about the association or its board of directors, call 1 800 ALUMNUS or 480/965 ALUM (2586).

## PROGRAM ASSESSMENT AND THE OFFICE OF UNIVERSITY EVALUATION

The Office of University Evaluation is a research and service facility that focuses on assessing and improving the effectiveness of the university's academic and support programs. The office conducts, coordinates, and manages research designed to measure the degree to which courses, curricula, and academic programs impart knowledge and skills to students as well as the quality of support provided to students. The results of these studies, or assessments, are used to enhance both the support provided to students and the intellectual integrity of an ASU education.

In order for the university to assess and improve its programs, periodic measurement of student experiences, perceptions, and intellectual growth must be obtained. When asked by the university, students are expected to participate in one or more evaluative procedures, such as the ASU Report Card. These evaluative procedures are designed to assess the efficacy of the total university experience, including teaching and learning and support programs and are not used in individual grading. The information obtained is one of the means used to improve the quality of the educational experience for this and future generations of ASU students.

For more information, call the office at 480/965-9291 or contact them via electronic mail at [oue@asu.edu](mailto:oue@asu.edu). The Office of University Evaluation's Web site is [www.asu.edu/oue](http://www.asu.edu/oue).

## RESEARCH CENTERS, INSTITUTES, AND LABORATORIES

These units serve the university's mission in research. They are overseen by eight of the colleges, the vice provost for Research, and ASU East.

### College of Architecture and Environmental Design

**Herberger Center for Design Excellence.** The Herberger Center for Design Excellence serves the Phoenix area through research, publications, and symposia regarding urban design and environmental planning issues. For more information, call 480/965-6693.

### College of Business

**L. William Seidman Research Institute.** The mission of the L. William Seidman Research Institute is to encourage and support business research by serving as a public access



point to the College of Business. Specific goals include transferring new knowledge to the public; supporting faculty and student research; encouraging the development of educational programs grounded in business research; and conducting high-quality, applied business research.

The institute encourages research activity by providing research support services to the faculty, staff, and students of the college. This includes facilitating grant preparation and assistance in grant administration. Its research centers act as the focal point for involving faculty and students in applied research on important issues identified by the business community.

The institute also serves an important role in the broader educational mission of the College of Business by disseminating the findings of research conducted by the faculty, students, and research center staff, as well as the results of business research from other sources around the world. This is accomplished through a variety of mechanisms: newsletters and research reports, seminars and conferences; internet Web pages; media interviews and press releases; and by responding to inquiries from businesses, public officials, and the community.

For more information, contact the director, L. William Seidman Research Institute, BA 319, 480/965 5362. The institute's Web site is [www.cob.asu.edu/seid](http://www.cob.asu.edu/seid).

**Arizona Real Estate Center.** The Arizona Real Estate Center, established in 1980, serves a multifunction research and educational role to foster better understanding of the real estate sector of the Arizona economy. Housing, commercial real estate, and construction activity data for Arizona and Maricopa County are collected by the center and are utilized for a variety of ongoing projects, including the calculation of affordability indexes and the computation of housing appreciation figures for the metropolitan Phoenix area. The center's annual outlook series provides a public forum for prominent members of the real estate industry to present their perceptions of market conditions.

For more information, contact the director, Arizona Real Estate Center, BA 319, 480 965 5440. The center's Web site is [www.cob.asu.edu/seid/arec](http://www.cob.asu.edu/seid/arec).

**Bank One Economic Outlook Center.** The Bank One Economic Outlook Center (EOC), established in 1985, specializes in economic forecasts of Arizona and the Western states. The center publishes the *Bank One Arizona Blue Chip Economic Forecast* (monthly), *Greater Phoenix Blue Chip Economic Forecast* (quarterly), *Western Blue Chip Economic Forecast* (10 issues per year), and *Blue Chip Job Growth Update* (monthly), an update of current job growth in the United States. The center also publishes *Mexico Consensus Economic Forecast* (quarterly), a forecast and historical data on the Mexican economy.

For more information, contact the director, Bank One Economic Outlook Center, BA 319, 480/965 5543. The center's Web site is [www.cob.asu.edu/seid/eoc](http://www.cob.asu.edu/seid/eoc).

**Center for the Advancement of Small Business.** The Center for the Advancement of Small Business (CASB) is the 21st century leader in business education, practice, and research that provides high quality, relevant programs, and information services focused on small business since 1994. The center enables students and existing small and medium

sized businesses to participate, contribute and compete in the global economy.

The center provides students from all disciplines with programs and resources that prepare them for positions of leadership in small and medium size businesses, and aids small and medium size businesses in the continuous improvement of their human resources and business practices. CASB also engages in applied research on entrepreneurship and the emerging changes and trends in small business.

For more information, contact the director, Center for the Advancement of Small Business, BAC 111, 480 965 3962. The center's Web site is [www.cob.asu.edu/seid/casb](http://www.cob.asu.edu/seid/casb).

**Center for Advanced Purchasing Studies.** The Center for Advanced Purchasing Studies (CAPS) was established in November 1986 by a national affiliation agreement between the ASU College of Business and the National Association of Purchasing Management (NAPM). It is the first and only program of its kind in the nation and is located in the Arizona State University Research Park, about eight miles south of the main ASU campus. CAPS conducts in depth research into the problems facing the purchasing profession today and, through its studies, seeks to improve purchasing effectiveness and efficiency and the overall state of purchasing readiness.

For more information, call 480 752 2277, or contact

DIRECTOR, CENTER FOR ADVANCED PURCHASING STUDIES  
ASU RESEARCH PARK  
2055 E CENTENNIAL CIRCLE  
PO BOX 22160  
TEMPE AZ 85285 2160

**Center for Business Research.** The Center for Business Research (CBR) has been a consistent source of information on the Arizona and metropolitan Phoenix economies since 1951. Both the business community and the public have had access to the economic indicators produced by the ongoing projects of the center, including quarterly net migration estimates for Arizona and Maricopa County, and the Metropolitan Phoenix Consumer Price Index. The center also conducts projects under the sponsorship of private and public agencies. Recent examples include: the economic impact of Super Bowl XXX, a study of seasonal migration to Arizona, and an analysis of the state's hospital industry. A monthly publication of the center, *AZB/Arizona Business*, plays a major role in disseminating to the public the economic information compiled by the research centers of the Seidman Institute. The staff within the center is available to respond to inquiries and to provide available data.

For more information, contact the director, Center for Business Research, BA 319, 480 965 3961. The center's Web site is [www.cob.asu.edu/seid/cbr](http://www.cob.asu.edu/seid/cbr).

**Center for Services Marketing and Management.** The Center for Services Marketing and Management (SMM Center) is a leading university based hub devoted to the study of services marketing and management since 1985. The SMM Center addresses how any company can improve internal service processes and use service and customer satisfaction as a competitive advantage. The center is cross industry in nature, encouraging firms to share the best ideas and practices for adaptation across industries. Though

grounded in marketing, the center's work is also cross functional, integrating concepts and techniques from marketing, operations, human resources, and management

The center's areas of expertise include customer retention and loyalty; service quality; service delivery, professional services such as healthcare, accounting and consulting services; customer satisfaction, services strategy; service culture; and service recovery. A leader in the business and academic communities, the SMM Center's work advances the knowledge base in the field and provides applicable frameworks, concepts, and tools.

The center offers its partner firms top flight executive education in services through the annual "Activating Your Firm's Service Culture" symposium, the annual "Services Marketing and Management" institute, and the annual "Information Technology Services Marketing" course, and provides customized executive education programs and research projects which are tailored to and conducted for charter member firms.

The center also actively supports the College of Business' M.B.A program that offers a certification in Services Marketing and Management. The services track infuses strong company based experience and encourages summer internships.

For more information, contact the director, Center for Services Marketing and Management, BAC 440, 480/965 6201.

**Center for the Study of Finance.** The Center for the Study of Finance (CSF), established in 1986, serves the national financial, policy making, and academic communities through research, publications, conferences, and educational programs. The focus of such activities is on the changing nature of the domestic and international financial system with such specific areas as the interaction between financial markets, deposit insurance reform, the deregulation of financial institutions, the financing of mergers and acquisitions, and the effect of government policy on financial markets receiving recent attention.

For more information, contact the director, Center for the Study of Finance, BAC 519, 480 965 5229.

**Joan and David Lincoln Center for Applied Ethics.** The Joan and David Lincoln Center for Applied Ethics (LCAE) has provided training and sponsored research in applied ethics for organizations since 1980. The center's research focuses on the connection between valued based businesses and their financial performance. Its study of companies with 100 years of consistent dividend payments has been reported in *The Wall Street Journal* and numerous academic and professional journals.

The center sponsors an annual conference on organizational ethics as well as on ethics for lawyers beyond the profession's code and model rules. Examples of topics covered in the center's published research reports include lawyers and ethics, ethics and international labor practices, the rogue employee and ethics in organizations, and ethics and cultural variances in international business.

Each year the center recognizes an outstanding business leader for exemplary ethical standards. Recipients of the Lincoln Center award in the past have been Lewis W Lehr of 3M, the center's first recipient; Sir Adrian Cadbury of Cadbury Schweppes; Robert W. Galvin of Motorola; James Houghton of Corning Glass Works; R. William Taylor of the

American Society of Association Executives; Jerry Junkins of Texas Instruments; Bowen McCoy of Buzz McCoy Associates, Inc.; and Aaron Feuerstein of Malden Mills Industries, Inc.

For more information, contact the director, Joan and David Lincoln Center for Applied Ethics, BA 352B, 480/965 2710

**Manufacturing Institute.** See "Manufacturing Institute," page 35, for information about this joint venture of the College of Business and the College of Engineering and Applied Sciences.

### College of Education

**Center for Bilingual Education and Research.** The Center for Bilingual Education and Research (CBER) was created in 1980 to conduct policy relevant research in bilingual and dual language education. The center's scope of work is driven by a need to merge several related topics into a single articulated conversation: English/Spanish biliteracy, promoting the role of public education to strengthen communities; and enabling binational collaboration among educators on both sides of the U.S. Mexico border. The long-term vision is to help develop a new pedagogy tailored to the needs of the bicultural region the center serves. The integration of these themes shapes the scope of work for CBER in these areas:

1. Within the broad scope of educational policy research, CBER focuses on scholarly inquiry that contributes to informed and enlightened discourse on language policy for schools and society, especially on the harmonious coexistence of English, the national language; and Spanish, the second most used language in our society.
2. Life in the American Southwest is bicultural and increasingly binational. In this Pan American context, bilingualism will gain in importance. Equally important will be the collective ability of residents on both sides of the border to work harmoniously in pursuit of a common destiny that will be ever more intertwined. Schools must help children and youth develop skills and predispositions to face this challenge.
3. Mexico and the U.S. are becoming more interdependent. In this context, Mexican educators should have opportunities to contribute to improving education for Mexican immigrant children in U.S. schools. To enable this, schools must create pilot projects and a collaborative infrastructure for collaboration among institutions and individuals on both sides of the U.S. Mexico border.

For more information, contact the director, Center for Bilingual Education and Research, ED 414, 480/965-7134.

**Center for Indian Education.** The Center for Indian Education is an interdisciplinary research and service center established in 1959. It promotes studies in American Indian policy and administration that contribute to scholarship and effective practices in education, professional training, and tribal capacity building. It is structured to foster relations between the university and sovereign tribes, and to provide training and technical assistance for community programs. The center publishes the *Journal of American Indian Education* and sponsors workshops and colloquia that bring together scholars and tribal community leaders.

The center provides leadership through a group of American Indian faculty and is organized on the basis of scholarly expertise of the faculty. In addition to College of Education faculty, responsibilities are shared by faculty from the School of Social Work, the School of Justice Studies, the College of Liberal Arts and Sciences, and the College of Law. Areas currently studied include administrative leadership, policy analysis, bilingual education, health and welfare policy, justice studies, and program development in professional studies.

For more information, contact the director, Center for Indian Education, ED 415, 480 965 6292

### College of Engineering and Applied Sciences

#### Center for Innovation in Engineering Education (CIEE).

This center, established in September 1994, promotes and encourages visionary approaches to educating engineering students. The center seeks support for the research, development, and assessment of new educational paradigms, unique curricula, improved courses, and new delivery systems that embrace a range of learning models, alternative classroom management strategies, improved pedagogies, and advanced educational technologies. The center also develops and offers workshops and seminars to encourage wide scale implementation of those approaches that are shown to be effective in developing the attributes that will be needed by graduates.

The vision of the center is that its programs will (1) create and continuously improve educational systems that will develop in graduates the skills, knowledge, and attitudes required for them to quickly and effectively become world class engineers; and 2) develop an expanding team of scholars that desires to actively explore new and improved educational theories, methods, and technologies to improve teaching and learning.

For more information, contact the CIEE director, EC G205, 480/965 5350, or access the center's Web site at [www.eas.asu.edu/asufc/ciee](http://www.eas.asu.edu/asufc/ciee)

**Center for Research in Engineering and Applied Sciences.** The Center for Research in Engineering and Applied Sciences supports the faculty and students in the knowledge creation and discovery mission of the university. The center provides research support services for all research in the college as well as interfacing with the research offices of the university and other colleges. The center area also supports the contribution of the college to the state's economic development through collaborative research partnerships with and technology transfer to industry. Specialized and interdisciplinary efforts are currently in place in such areas as acoustics, air pollution, alternative energy, applied mechanics, artificial intelligence, automated manufacturing, bioengineering, communications, computational microelectronics, computer aided design and manufacturing (CAD/CAM), computer integrated manufacturing (CIM), computer science, control systems, data and information systems, electrical characterization, environmental resources and control, expert systems, fluid mechanics, fuels and combustion, materials, mass transfer, metallurgy, nuclear radiation, photovoltaics, plasma, plastics, power systems, analyses, robotics, semiconductor materials and fabrication, semiconductor processing, signal processing, soil

mechanics, solar thermal energy, solid state electronics and systems design and analysis, telecommunications, thermodynamics, transportation systems, turbines, very large scale integrated (VLSI) circuits, waste management, and water resources.

For more information, contact the director, Center for Research in Engineering and Applied Sciences, EC G136, 480 965 1725, or access the center's Web site at [www.eas.asu.edu/research](http://www.eas.asu.edu/research).

**Center for Low Power Electronics.** The technical areas of focus include

1. basic materials, alternative materials, and their fabrication;
2. device design optimization;
3. design of digital, analog, and hybrid low power circuits, and
4. power based physical design for single and multi chip VLSI systems

For more information, contact the director, Center for Low Power Electronics, ERC 115, 480/965 3708.

**Center for Solid-State Electronics Research.** CSSER focuses on research in the areas of semiconductors crystal growth, both by bulk and epitaxial techniques, device characterization and modeling, defect behavior in semiconductors material characterization, processing, fine line lithography, surface analysis, and transport. Major programs address semiconductor device modeling, transport theory, optoelectronics, teroelectrics, semiconductor processing, microwave devices, and ultra submicron devices. New programs address synthetic neural systems and their impact on VLSI design. Research in the specially designed facilities includes various aspects of submicron dimension devices.

For more information, contact the director, Center for Solid State Electronics Research, ERC 115, 480/965 3708 or access the center's Web site at [ceaspub.eas.asu.edu/csser](http://ceaspub.eas.asu.edu/csser).

**Manufacturing Institute.** The Manufacturing Institute is a joint venture of the College of Business and the College of Engineering and Applied Sciences, established to enhance manufacturing research and industrial collaboration at the interface between the two colleges. The mission of the institute involves integrating aspects of manufacturing in both the business and engineering areas, helping to fulfill the university's goal of becoming one of the leading educational and research institutions in both manufacturing enterprise and manufacturing process technology issues. The institute has two academic codirectors, one each from the College of Business and the College of Engineering and Applied Sciences, and has active industry involvement.

For more information, contact one of the directors, Manufacturing Institute, GWC 402, 480 965 3709, or access the institute's Web site at [mi.asu.edu/mi](http://mi.asu.edu/mi).

**Center for System Science and Engineering Research.** The Center for System Science and Engineering Research has established four focus areas: nonlinear dynamical systems, control theory and its applications, mathematical neuroscience, and scientific computing and interdisciplinary systems engineering. The center is jointly sponsored by the College of Engineering and Applied Sciences and the College of Liberal Arts and Sciences. Its main goals are the

creation and enhancement of interdisciplinary and cooperative research, graduate education, and public service programs in the areas of systems science, applied mathematics and computation.

For more information, contact the SSERC director, GWC 606, 480 965 8382, or visit the center's Web site at [www.eas.asu.edu/sserc](http://www.eas.asu.edu/sserc)

**Telecommunications Research Center.** Telecommunications play a vital role in home, commercial, entertainment, educational, scientific, and military systems. The Telecommunications Research Center focuses its interests and activities in research and educational programs. The approach is to conduct basic and applied research, develop technologies, and provide education programs in all major areas of telecommunication, from signal generation to reception. The targeted areas of excellence are antennas, propagation, and scattering; microwave circuits, devices, and measurements; optical communications; signal processing; broadband switching, and communication systems. Ultramodern laboratories and computational facilities are associated with the center.

For more information, contact the director, Telecommunications Research Center, GWC 411, 480 965 5311

### College of Fine Arts

**Institute for Studies in the Arts.** As the research center for the College of Fine Arts, the Institute for Studies in the Arts (ISA) serves as a laboratory for the research and development of new art forms, new ideas and concepts, and innovative technologies for artistic expression; a network for communication among creative scholars both within and outside the arts, and a resource base for the documentation, evaluation, and dissemination of research in the arts. ISA addresses the needs of a variety of populations through technical and monetary support and sponsorship of research projects, performances, exhibitions, and symposia.

ISA facilities include an experimental performance studio at Drama City and a state of the art video production and post production laboratory in Matthews Center. ISA maintains a database of interdisciplinary scholarship in the arts and actively seeks to communicate with researchers from diverse backgrounds in the ASU community and worldwide.

ISA is open to a wide range of research proposals from both faculty and graduate students, provided such proposals address the ISA mission of experimentation and innovation in the arts.

For information, contact the director, Institute for Studies in the Arts, MCENT 224, 480 965 9438, or visit ISA's Web site at [researchnet.vprc.asu.edu/isa](http://researchnet.vprc.asu.edu/isa)

### College of Law

**Center for the Study of Law, Science, and Technology.** Located in the College of Law, the center conducts research, edits the *Jurimetrics Journal of Law, Science and Technology* in cooperation with the American Bar Association Section on Science and Technology, and sponsors seminars, workshops, and conferences. Through these activities, the center seeks to contribute to the formulation and improvement of law and public policy affecting science and technology and to the wise application of science and technology in the legal system. Current areas of research include communications and telecommunications law, computer related

law, forensic science and statistics, legal issues and biotechnology, law and medicine and law and social science.

For more information, contact the director, Center for the Study of Law, Science, and Technology, LAW 102, 480/965-2124

### College of Liberal Arts and Sciences

**Arizona Center for Medieval and Renaissance Studies (ACMRS).** The Arizona Center is a research unit serving affiliate scholars from ASU Northern Arizona University, and the University of Arizona. It represents a variety of disciplines including history, literature, philosophy, religion, language, music, art, and science. ACMRS enriches academic offerings in medieval and renaissance studies by sponsoring one or two visiting professors each year. Graduate research assistantships are also available through the center.

Significant opportunities for the study of the Middle Ages and the Renaissance exist at ASU. Hayden Library has an extensive microfilm collection and many rare books in medieval and renaissance studies. ACMRS also sponsors a lecture series each semester covering a variety of topics.

Other programs include an annual conference, a public symposium, a summer study abroad program at University of Cambridge (United Kingdom), and student exchange programs with the University of Copenhagen (Denmark) and the University of Kalmar (Sweden).

Since 1996, ACMRS has published *Medieval & Renaissance Texts & Studies* (MRTS) a major series of editions, translations, and reference works. In collaboration with the University of Massachusetts at Dartmouth and the Medieval and Renaissance Committee of the University of Michigan, ACMRS sponsors and co-edits *Mediterranean Studies*, an annual interdisciplinary journal publishing articles on all aspects of the Mediterranean region. ACMRS also sponsors a book series titled "Arizona Studies in the Middle Ages and the Renaissance," published by Brepols (Belgium).

ACMRS also partners with the Renaissance Society of America and the University of Toronto in "Iter," a massive, retrospective, online medieval and renaissance bibliography covering all languages and disciplines, and is the official site of the Medieval Academy of America's online data project offering information on medieval centers, programs, committees, and regional associations in North America.

For more information, contact the director, Arizona Center for Medieval and Renaissance Studies, SS 224, 480/965 5900.

**Cancer Research Institute.** Significant advances in the treatment of human cancer and other serious medical problems depend upon scientists well trained in organic chemistry, biochemistry, and biology. The Cancer Research Institute provides graduate students with the specialized training necessary for research in the discovery and development of effective anticancer drugs. Among various activities, laboratory personnel are pursuing a unique program concerned with isolation, structural identification, and synthesis of naturally occurring anticancer agents from marine animals, plants, and marine microorganisms.

For more information, contact the director, Cancer Research Institute, CRI 209, 480 965 3351.

**Center for Asian Studies.** Through its East Asian and Southeast Asian studies programs, the center serves as

research coordinator for Asian studies' faculty and graduate students in a variety of disciplines. The center sponsors colloquia and research conferences. It also publishes two scholarly *Monograph Series* and a newsletter on Southeast Asian studies *Suvarnabhumi*, which have an international readership. Graduate students may apply for research assistantships in the center and its program.

The center administers student exchange programs with a number of universities in Asia. The center also sponsors a graduate student colloquium and film series on Asian topics. A reading room is located in the center office suite offering a variety of Asian and English language publications and newspapers from and about Asia.

For more information, contact the director, Center for Asian Studies, WHALL 105, 480 965 7184.

**Center for Meteorite Studies.** One of the nation's largest collections of extraterrestrial materials is available for research in the Center for Meteorite Studies. Teaching and research on meteorites, meteorite craters, and related areas of space and planetary science are accomplished through the regular academic units in cooperation with the center.

For more information, contact the director, Center for Meteorite Studies, PS C151, 480 965 6511.

**Center for Solid-State Science.** The Center for Solid State Science is a research unit within the College of Liberal Arts and Sciences.

The membership comprises faculty and academic professional researchers and research support personnel, most of whom hold simultaneous appointments in affiliated academic units. The Center for Solid State Science is the ASU focal point for interdisciplinary research on the properties and structures of condensed phases of matter at the interfaces between solid state chemistry and physics, earth and planetary science, and materials science and engineering. It also supports interdisciplinary approaches to science and engineering educational outreach activities.

The center provides an administrative home for large, multidisciplinary, block-funded research projects. These include the NSF supported Materials Research Science and Engineering Center MRSEC and the Interactive Nano Visualization for Science and Engineering Education InVSEE project. To support these activities, members of the center operate modern and sophisticated research facilities and organize regular research colloquia and symposia.

Principal topical areas of research in the center include studies of structure and reactivity of surfaces and interfaces, electronic materials, advanced ceramics and glasses, synthesis of new materials, high pressure research, development of techniques in high resolution electron microscopy and microstructural and chemical analysis, development of visualization techniques at different scales of magnification for science education and community outreach.

The research facilities of the center include

- A. **The Center for High Resolution Electron Microscopy (CHREM)**, which operates several ultra high resolution and ultra high vacuum electron microscopes and supports microscopy methods and instrumentation development, including holography, position and time resolved photo spectroscopy and energy filtered imaging and diffraction. The center provides high resolution capability for a large external group from other universities and industry.
- B. **The Goldwater Materials Science Laboratories (GMSL).** These facilities include
  1. the Materials Preparation Facility (MPF), which provides a wide range of synthesis and processing capabilities for preparation of specimen materials. MPF also provides thermal analysis for study of solid state reactions and Auger and X ray photo electron spectroscopy for analysis of surface compositions and electronic structure of surfaces;
  2. the Materials Science Electron Microscopy Laboratory (MSEML) which provides state of the art electron microscopes for analysis of microstructures, including imaging and diffraction, and high spatial resolution chemical analysis using energy dispersive X ray and electron energy loss micro spectroscopy;
  3. the Ion Beam Analysis of Materials (IBAM) facility, which provides compositional and structural determination of the surface and near surface regions (0–2mm) of solids by ion beam analysis where elemental composition and depth distribution information are needed. Channeling experiments are used to determine crystal perfection and site occupancy;
  4. the Secondary Ion Mass Spectrometry (SIMS) laboratory, which provides depth profile and point composition analysis with very high chemical sensitivity, on the order of one part per billion, including isotopic analysis for many materials. SIMS is also used as a chemical microscope, to image elemental distributions on specimen surfaces;
  5. the Scanning Probe Microscopy Laboratory (SPM), which provides facilities for nanoscale viewing of solid surfaces using scanning tunneling microscopy (STM), atomic force microscopy (AFM) and related techniques. The SPM laboratory serves as a focus for undergraduate research training programs, and educational and outreach activities;
  6. the High Pressure Laboratory (HiPLAB), which provides facilities for synthesis of new materials and for geochemistry, geophysics studies at up to 25 Gpa (250,000 atmospheres) and temperatures greater than 2000° C. These facilities are complemented by diamond anvil cells capable of in situ studies at up to one million atmospheres. This laboratory provides a focus for core research projects within the MRSEC.
  7. the Visualization Facility (VF), which consists of a battery of linked workstations for remote operation of instruments and data collection, capture of images in real time, and advanced computing and simulation of materials. The VF is used in research

and in undergraduate and graduate education, as well as in educational and community outreach; and

8. other specialized laboratories under development include high resolution X ray diffraction for thin film characterization, optical spectroscopy, and nuclear magnetic resonance spectroscopy for solid state studies and research on materials under extreme conditions

These facilities provide the primary teaching and research resources used by students in the Science and Engineering of Materials interdisciplinary Ph.D. program and the undergraduate option for Materials Synthesis and Processing. They are also used extensively by students in disciplinary programs from affiliated departments.

For more information, contact the Director, Center for Solid State Science, PSA 213, 480/965 4544.

**Center for the Study of Early Events in Photosynthesis.** This center, located in the College of Liberal Arts and Sciences, was established at ASU in 1988 as part of the USDA/DOE/NSF Plant Science Centers Program. The center serves as an infrastructure supporting ASU scientists who study photosynthesis using a variety of methods and approaches, ranging from molecular biology and biochemistry to organic chemistry, ultrafast laser spectroscopy, X ray crystallography, and theoretical chemistry. It is designed to enhance undergraduate, graduate, and postdoctoral education through multidisciplinary cooperative research projects.

The ultimate objective of the research is the elucidation of the basic principles governing the biochemical and biophysical processes of photosynthetic energy storage. This goal is being realized via investigation of the early events of photosynthesis, including light absorption and excitation transfer in photosynthetic antennas; the mechanism of primary photochemistry in plant and bacterial systems; secondary electron transfer processes; structure and assembly of photosynthetic antennas, reaction centers, and electron transfer proteins, pigment protein interactions, artificial and biomimetic photosynthetic solar energy conversion systems; and mechanisms of biological electron transfer reactions

The center is equipped with state-of-the-art instrumentation which allows students to do frontier research in a broad range of disciplines. Equipment includes a variety of pulsed lasers for measurements with time resolution ranging from sub picoseconds to seconds; a 500 MHz NMR instrument; an EPR spectrometer; a protein X ray facility; spectrophotometers; fluorometers; a protein sequencer; and an amino acid analyzer.

The center sponsors a weekly Photosynthesis Seminar Series and brings in visiting scientists from around the world to carry out collaborative research. Undergraduate, graduate and postdoctoral training programs in the Department of Chemistry and Biochemistry and the Department of Plant Biology are central components of the activities of the center.

For more information, contact the director, Center for the Study of Early Events in Photosynthesis, PS D207, 480/965-1963.

**Exercise and Sport Research Institute.** The Exercise and Sport Research Institute (ESRI) is an interdisciplinary

research unit located in the Department of Exercise Science and Physical Education and serves, in part, as a research facility for the interdisciplinary doctoral program in exercise science.

The major research areas can be described as follows. *Biomechanics* applies the laws of physics to the study of human movement. It examines internal and external forces applied to the human body and the effects these forces have on the body. *Exercise physiology* studies the acute responses of the body to exercise and its chronic adaptations to training. It also studies the interrelationships among physical activity, performance, and health. *Exercise biochemistry* studies the provision and regulation of energy transfer during and after exercise. *Exercise endocrinology* studies interrelationships of exercise and training with stress, hormones, neurotransmitters, and the immune system. *Motor behavior and sport psychology* study human behavior in motor activity and sport settings. *Motor behavior* includes the subdomains of *motor learning, control, and development*. Motor learning focuses on skill acquisition, motor control studies how movement is regulated and controlled via the nervous system in normal and pathological populations, and motor development studies how growth and maturation affect performance and learning across the lifespan. Within the context of sport and exercise, *sport psychology* examines the influence of psychological variables on performance or health and the influence of participation on psychological phenomena.

The ESRI is affiliated with a number of medical institutions in the Phoenix area.

Faculty and graduate students at the ESRI are investigating a wide range of topics concerning human physical activity, including different ages, levels of health, levels of ability and fitness, and environments; and levels and types of training, body composition, nutrition, and physical and emotional stresses. Where applicable, these aspects are studied using an interdisciplinary approach.

For more information, contact the director, Exercise and Sport Research Institute, PEBE 159, 480/965 7473.

**Hispanic Research Center.** The Hispanic Research Center (HRC) at ASU is an interdisciplinary unit, dedicated to research and creative activities, that is university wide but administered through the College of Liberal Arts and Sciences. The HRC performs basic and applied research on a broad range of topics related to Hispanic populations, disseminates research findings to the academic community and the public, engages in creative activities and makes them available generally, and provides public service in areas of importance to Hispanics.

Faculty, staff, and advanced graduate students organize into working groups to develop a broad range of specific projects and lines of inquiry within the general categories of Hispanic entrepreneurship, science and technology, information and data compilation and dissemination, the Hispanic polity, and the arts. Ongoing activities of the HRC, primarily funded by external grants, include the Arizona Hispanic Business Survey, the *Bilingual Review Press*, the Coalition to Increase Minority Degrees, the Community Art and Research Outreach (CARO), *Companeros en la Salud*, Project 1000, and the Western Alliance to Expand Student Opportunities.

CARO sponsors creative activities and action research in collaboration with community based organizations and ASU faculty.

For more information, contact the director, Hispanic Research Center, CFS 104, 480/965 3990

**Institute of Human Origins.** The Institute of Human Origins (IHO), founded in 1981 by Donald Johanson, became part of the College of Liberal Arts and Sciences in 1997. IHO is a multidisciplinary research organization dedicated to the recovery and analysis of the fossil evidence for human evolution and the establishment of a chronological framework for human evolutionary events. IHO's scientists carry out field research at sites in Africa, the Middle East, and Asia. IHO houses the largest collection of *Australopithecus afarensis* casts (including "Lucy," a 3.2 million year old human ancestor) in the world as well as an extensive collection of other fossil hominid casts. IHO's library contains more than 3,000 volumes, numerous journals, video tapes, audiotapes, and slides related to human evolution and fossil sites. IHO produces periodic newsletters, offers lecture series, conducts tours and workshops, and supports numerous informal science education outreach projects.

For more information, visit the Institute of Human Origins, SS 103, or call 480/727 6580 or access the Web site at [www.asu.edu/clas/iho](http://www.asu.edu/clas/iho).

**Latin American Studies Center.** Arizona maintains an ever-growing interest in Latin America that draws upon an extensive experience of historical and geographical ties. The Latin American Studies Center is the focal point for these interests at ASU. Through its program, the center serves the university community and maintains strong ties with various Latin American organizations in the state and the nation. Principal activities are coordinating Latin American studies at the undergraduate and graduate levels; sponsoring student exchange programs, organizing events featuring Latin American arts and culture, numerous seminars, and research conferences; publishing a wide range of professional materials; and undertaking and facilitating research about the region.

The center administers student exchange programs with the Catholic University of Bolivia and three Mexican universities—the Autonomous University of Guadalajara, the Autonomous University of Nuevo Leon, and the University of Sonora. Each spring several ASU students are selected to attend courses at the Latin American universities while Bolivian and Mexican students attend ASU.

The center is a member of the American Modern Language Association, Consortium of U.S. Research Programs for Mexico, Consortium for Latin American Studies Association, Pacific Coast Council on Latin American Studies, Rocky Mountain Council for Latin American Studies, Consortium of Latin American Studies Programs, and Conference on Latin American History.

The center directly encourages research, not only through its research conferences, but also through close coordination with the Latin American collection of Hayden Library and networking with Latin American universities.

For more information, contact the director, Latin American Studies Center, SS 213, 480/965 5127.

## College of Public Programs

**Morrison Institute for Public Policy.** Established in 1981 by the Morrison family of Gilbert, Arizona, as a unit within the School of Public Affairs, the Institute conducts research on public policy matters, informs policy makers and the public about issues of importance, and advises leaders on choices and actions. Morrison Institute offers a variety of services to public and private sector clients and pursues its own research agenda. Services include policy research, program evaluation, and public outreach. The institute's interests, research, and publications span such areas as education, urban growth, human services, workforce development, economic development, and arts and culture.

For more information, call 480/965-4525, visit the Web site at [www.asu.edu/copp/morrison](http://www.asu.edu/copp/morrison), or write

MORRISON INSTITUTE FOR PUBLIC POLICY  
ARIZONA STATE UNIVERSITY  
PO BOX 874405  
TEMPE AZ 85287 4405

## Vice Provost for Research

**Center for Environmental Studies.** Established in 1974, the center encourages and coordinates interdisciplinary environment-related activities in the natural and social sciences within the university. The center is also home to the Central Arizona Phoenix Long Term Ecological Research (CAP LTER) project, one of only two urban sites in the national Science Foundation's LTER Network.

Research programs within the center emphasize ecosystem and human impact studies; riparian and aquatic studies; wildlife biology; and environmental regulation and policy issues covering environmental risk assessment, hazardous materials, waste management, and studies relating to environmental problems on the U.S. Mexico border.

The center encourages communication among academic, government, and private sectors through research, workshops, seminars, and working papers. It has an active K-12 environmental education outreach program. It manages the Sierra Ancha Research Station for the university. The station is located at an elevation of 5,000 feet in the desert pine forest transition. It offers research potential in anthropology, biology, ecology, geology, plant biology, and resource management. Research space and living accommodations are also available for academic and research organizations.

For more information, contact the director, Center for Environmental Studies, Tempe Center (University and Mill), 480/965 2975.

## ASU East

For information on the Center for Agribusiness Policy Studies, see the "Morrison School of Agribusiness and Resource Management" section, page 543.



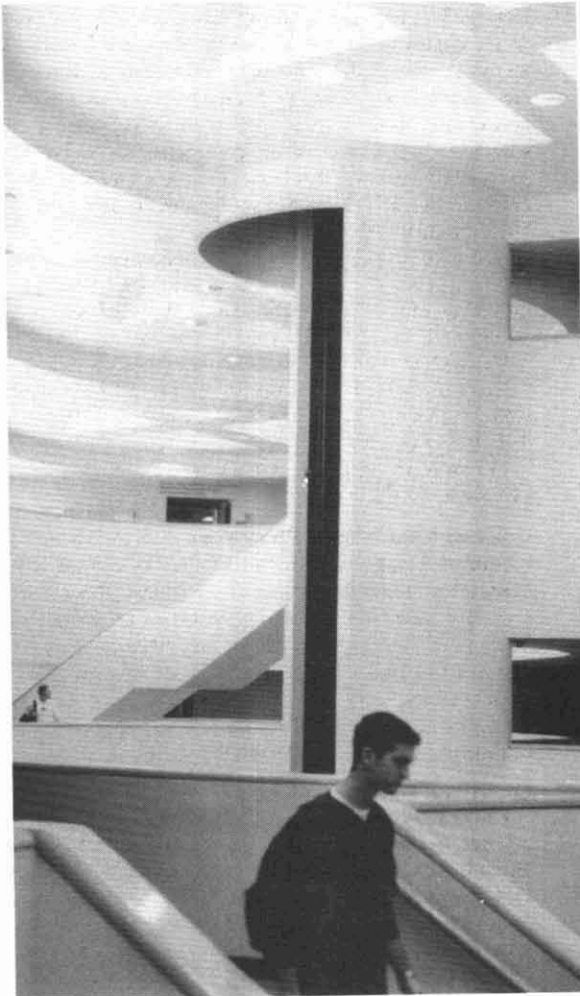
# Student Services

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The university is committed to the belief that an education involves more than attending class. While the assimilation of information is a central part of the university experience, learning about others, about independence and leadership, and about living in a complex society are equally important. Student Affairs' services and developmental programs reflect this philosophy.

## UNDERGRADUATE ADMISSIONS

For many undergraduates, the first introduction to ASU is through the recruitment and admission programs of Undergraduate Admissions. Personal contact with prospective students through high school and community college visits and through student visits on campus are some of the approaches that provide information about the academic programs and support services available at ASU. A primary goal of Undergraduate Admissions is to identify, inform, motivate, recruit, and enroll students from ethnic groups



Interior of Student Services Building

John MacIsaac photo

underrepresented at ASU. Orientation programs ease the students' (and parents') transition to the ASU campus. Undergraduate Admissions also coordinates and supports the ASU Parents Association. For more information, call 480/965-7788.

## STUDENT FINANCIAL ASSISTANCE

Approximately two-thirds of the full-time students at ASU rely on some form of financial assistance to meet their educational expenses. The purpose of Student Financial Assistance is to review and award financial resources from a variety of private, federal, state, and institutional sources. Information about and applications for scholarships, grants, loans, and student employment are coordinated by this department.

Computerization and an understanding of students' needs have contributed to the efficient and responsive operation of this student resource. Assistance in student loan counseling and debt management services are innovative programs offered through this agency. ASU is nationally recognized for providing this unique financial aid service. For more information, call 480/965-3355.

## REGISTRAR

Management of the registration system and maintenance of academic records are the primary responsibilities of the Office of the Registrar. InTouch, the ASU touch-tone telephone system for registration and fee payment, and the online registration system, accessible at any registrar site, including one at ASU West, ease the enrollment process and make ASU a national leader in the use of computerized registration. The Student Information System stores academic records and improves the quality of data used in academic advising. The Office of the Registrar coordinates applications for graduation and undergraduate readmission, course changes and scheduling, transcript services, applications for residency, and verification of enrollment. Additional information is available on the Web at [www.asu.edu/registrar](http://www.asu.edu/registrar) or by phone at 480/965-5988.

## Veterans Services

This office offers complete educational services for U.S. veterans and their eligible dependents. Counseling about admissions, registration, and veterans benefits is available. Veterans programs provide service by advising all interested veterans and dependents about educational benefits and their optimum use. Students must apply each semester to receive veterans benefits. The program also assists veteran students in obtaining suitable paid tutors, when needed, using their federal benefits. Veterans must achieve adequate GPAs and semester-hour progress toward their academic programs for continued educational benefits. The university must report this progress each semester. Students receiving veterans educational benefits are not eligible to receive pay for audited courses. The Veterans Services Section is located in SSV B117. For more information, call 480/965-7723.



## RESIDENTIAL LIFE

Living in one of the ASU Main residence halls provides students the opportunity to make the most of their college experience. Special residential communities for freshmen, honors students, students participating in fraternities and sororities, and students in particular academic areas offer opportunities to enrich campus life.

The Freshman Year Experience program (see "Student Development" on this page) provides a unique environment of classrooms, live-in tutors, academic advisors, and other support services designed to help freshmen develop skills for success.

Students benefit from the activities of residential communities, including halls that feature apartment style or single rooms or one that promotes a study intensive environment.

Students are encouraged to apply for housing early. While applications are accepted at any time, assignment to a residence hall is not made until a student is admitted to the university. Requests for specially modified rooms for students with disabilities should be noted on the application.

ASU Main residence hall application information may be obtained by calling 480-965-3515 or writing

RESIDENTIAL LIFE  
ARIZONA STATE UNIVERSITY  
PO BOX 870212  
TEMPE AZ 85287-0212

Information about ASU Main voluntary meal plans may be obtained by calling 480/965-3464 or writing

CAMPUS DIN NG  
ARIZONA STATE UN VERSITY  
PO BOX 871101  
TEMPE AZ 85287-1101

Information about ASU Main living/learning communities may be obtained by calling 480/965 9600 or writing

COCURRICULAR PROGRAMS AND SERVICES  
ARIZONA STATE UNIVERS TY  
PO BOX 870212  
TEMPE AZ 85287 0212

## ASU East Housing

ASU East housing includes residence halls as well as two- to five-bedroom homes. For more information, see "Williams Campus Housing and Residential Life," page 542, or call 480-727-1700.

## STUDENT DEVELOPMENT

### Freshman Year Experience

A student's freshman year is a time to learn new ideas, meet new people, and grow as an educated citizen ready to contribute to the community. The Freshman Year Experience (FYE) helps freshmen achieve academic success by coordinating services and programs in settings designed just for the freshman student. Services provided include: UNI 100 classes, academic advisors in the halls, computer labs, live-in tutors with tutoring offered five nights a week, staff trained to support students in achieving academic success, and special floors for engineering majors, prebusiness majors, and Honors College scholars.

FYE is for all freshmen regardless of where the student lives. ASU has designated several residence halls as FYE

service sites: Palo Verde East and West, Manzanita, and Sonora residences provide all FYE services. FYE daytime tutoring is offered in Best Hall, Palo Verde East Hall, and at the Off-Campus FYE Student Lounge, located on the third floor of the Memorial Union. A freshman can choose to live in one of the halls and have direct access to FYE programs or opt to live off campus or in another residence hall and still use those services.

### Student Organization Resource Center

The Student Organization Resource Center provides opportunities for students to get involved with established campus organizations and helps students start new organizations. The center maintains a list of all registered groups, schedules mall activities, and provides a resource desk where students can get information on student activities and leadership opportunities. The REACH information desk is also in the Student Organization Resource Center located on the third floor of the Memorial Union. For more information, call the center at 480-965-2249 or REACH at 480-965-2255.

### Learning Resource Center

The Learning Resource Center (LRC) provides ASU students with academic support through tutoring, Supplemental Instruction™ (SI), peer advising, and computer assisted instruction. The LRC's tutoring program is certified by the College Reading and Learning Association, a national academic organization that establishes standards for tutoring in approximately 100 ASU courses. SI targets traditionally challenging courses and offers students enrolled in those courses the opportunity to meet with an SI leader, a student who already has successfully completed the course, for study skills sessions that pertain to the material in the course. The LRC offers SI jointly with the Division of Undergraduate Academic Services.

The LRC's peer advising program consists of undergraduate and graduate students who provide individual and group sessions on general academic skills and college adjustment/survival skills such as note-taking, time management, dealing with test anxiety, and organizational skills. Computer assisted instruction is open to all ASU students, staff, and faculty in the LRC's Macintosh and IBM compatible computer labs.

For more information, contact the LRC at 480-965-6254, or visit its Web site at [www.asu.edu/vpsa/lrc](http://www.asu.edu/vpsa/lrc).

### Student Leadership Programs

Student Leadership Programs serves as a resource to students interested in leadership development. Resources include a leadership library and information about the ASU Leadership Development Model and other campus, local, and national leadership programs. Staff are available for presentations, workshop facilitation; and advising, guidance, and coordination of efforts in leadership development. For more information, call 480/965-2249.

### Child and Family Services

Child and Family Services (CFS) provides resources and referral services to students, faculty, and staff. Information about the Campus Children's Center (480/921-2737), Child Development Laboratory (480-965-7267), Child Study Laboratory (480/965-5320), and the College of Education Pre school (480/965-2510) may be obtained at CFS or by calling the programs directly. CFS maintains a child care

referrals database and coordinates workshops and discussion groups on child and elder care issues. Educational materials and listings of additional on and off-campus activities, programs, and services for children and their families are available at the CFS office, MU 14C. Appointments are recommended.

For more information, call 480/965 9515.

### **Fraternities and Sororities**

Involvement in a fraternity or sorority is one of the most rewarding aspects of a student's college experience. Twenty-one fraternities and 13 sororities provide opportunities for leadership development, academic success, campus involvement, community service, social interaction, brotherhood/sisterhood, and intramural participation. These organizations are governed by the Interfraternity Council and the Panhellenic Council. The National Panhellenic Council offers nine predominantly African American organizations for involvement with community service, cultural learning, and a deep sense of tradition. The Hispanic Greek Council, consisting of two fraternities and two sororities, offers Hispanic students an opportunity to work on service projects, give back to the Latina/Latino culture, and network within the Hispanic community. In addition to the benefits of life-long membership, many of the fraternities and sororities have chapter houses or residence hall floors that provide a rewarding living/learning option for their members. For more information, call 480 965 2249.

### **The Office of Cocurricular Programs and Service**

The Office of Cocurricular Programs and Service (CCPS) works to enhance the ASU undergraduate educational experience by maximizing faculty and student interaction outside of the traditional classroom setting. There are four components to the office that help facilitate this process: academic partnerships, residential programming, service learning, and CAM 394 (small seminar) courses.

#### **Academic Partnerships**

*Student/Faculty Retreat.* This annual event gives students and faculty an opportunity to come together and share intellectual dialogue in a retreat/camp style setting. Through small lectures, interactive experiences, and social activities, students and faculty can begin to break down the barriers often present in the traditional classroom setting.

*Classroom Film Colloquia.* During a semester, three films based on the same theme are shown with the intent of dialogue and interaction between students and faculty. The films are shown in a social environment (Center Complex Residence Hall Courtyard). At the completion of each film, the faculty and students discuss the meaning of the film and how it relates to the film series.

*Student and Faculty Dinners/Lunches.* A few times a semester, students come together with faculty in an informal setting (a residence hall or a restaurant) to share a meal and dialogue about a specific topic.

*Last Lecture Series.* During the spring semester of every year, students are asked to nominate and recognize fantastic teaching faculty by awarding them with the opportunity to give what would be their last lecture ever.

#### **Residential Programming**

*Center Complex Residence Halls.* Best, Hayden, Irish, and McClintock have been named CCPS Living Learning Com-

munities. Within these residence halls, CCPS staff, along with the resident assistants, have been charged with providing programming around the three themes of leadership, diversity and service/civic responsibility. Many of these programs also include faculty involvement. Examples of programs include:

1. Annual Fall Kick Off Week, a series of programs during Orientation Week,
2. Coffee Talks, monthly small group discussions on topics ranging from religion to race relations with coffee and snacks provided by Tempe's local coffee shops; and
3. Open Mic Night, an event occurring two or three times a semester in which students can share their talents (e.g., poetry, reading, singing, playing of instruments, etc.) with fellow residents.

CCPS also consults with resident assistants on program ideas, faculty involvement, advertising/marketing as well as financial resources for the purchase of food and necessary materials.

**Service Learning.** CCPS provides faculty with the necessary training to implement service learning into their curriculum along with various options for service.

CCPS also provides reflection sessions for the faculty and students who participate in service learning. The reflection session provides students with the opportunity to discuss their service learning experience with their peers.

**CAM 394 (Small Seminar) Courses.** These courses bring together a faculty member with no more than 12 students to discuss and learn about a specific interest or topic. The topics of these courses are designed to engage students in intellectual dialogue on one of the themes of leadership, diversity and service/civic responsibility. CAM 394 courses are one credit, pass/fail elective courses and are taught in the classroom of Hayden Residence Hall. Freshman through senior undergraduate students are encouraged to register.

The Office of Cocurricular Programs and Service is located in SSV 178 and 180, 965 9600. The CCPS Programming Office is located in Best Residence Hall, 965 0336.

### **CAMPUS COMMUNITIES (CAM)**

**CAM 394 ST: Campus Communities Seminar.** 1 F S

**CAM 484 Campus Communities Internship.** (3-6 F S)

### **EDUCATIONAL DEVELOPMENT**

Educational Development comprises five programs designed to assist students with special needs and serves as an educational outreach program for ASU. The ASU/Phoenix Educational Opportunity Center, located off campus, provides information for college admissions and financial aid; Disability Resources for Students is a comprehensive support program for qualified students with disabilities who are attending ASU; the Hispanic Mother Daughter Program assists Hispanic girls with preparation for college; the Upward Bound program provides college preparation for high school students that are first generation and low income; and the Veterans Upward Bound program prepares veterans for postsecondary enrollment. All Educational Development programs are fully or partially funded by the

U.S. Department of Education and are known nationally as TRIO programs.

**The ASU/Phoenix Educational Opportunity Center.** This community outreach service focuses on involving the individuals. The center has a main office at 1000 E. Apache Boulevard, Suite 118, Tempe, AZ, and satellite offices around Maricopa County. It offers vocational testing and guidance as well as assistance in application for admission, scholarships, and financial assistance at a postsecondary institution suited to particular individuals' needs. Services are free. For more information, call 480-894-8451.

**Disability Resources for Students.** Disability Resources for Students (DRS) ensures that qualified students with disabilities, upon request, are provided with reasonable and effective accommodations. DRS facilitates equal access to educational and curricular programs, campus activities and career and employment opportunities for qualified students with disabilities by offering a wide range of academic support services that include, but are not limited to, the following: academic and career consultation; campus and community program coordination and referrals; supplemental readers in coordination with Record for the Blind and Dyslexic (RFB&D); in-class note-taking program; non-standard academic testing accommodations; specialized equipment for specific disabilities; the Hewlett-Packard Adaptive Technology Center; American Sign Language or oral interpreters; TTY access including campus pay phones; educational materials, e.g., braille alternative print production, large print, raised-line charts and graphs, braille campus map; campus mobility services; and the Access Employment Program. Although students are responsible for their own personal care attendants, DRS does provide an Attendant Management Training Program for students with disabilities and maintains a current list of applicants untrained seeking personal care attendant positions. As a U.S. Department of Education TRIO Student Support Services Grant allows DRS to incorporate a unique academic enhancement model to the disability support services program for 270 selected students with disabilities who meet TRIO eligibility requirements.

Some classroom accommodations such as braille, audio tapes, interpreting services, enlarged print and lab material conversions, require an extended preparation time, i.e., one semester. To ensure the availability of accommodations from the first day of class, students are required to preregister for classes and notify the appropriate DRS program coordinator immediately upon submitting a Course Request Preregistration form. Although DRS will attempt to provide requested appropriate accommodations for students who miss preregistration, they cannot be guaranteed and effective alternatives may be necessary. *Disability Information is Confidential.* For more information, call 480-965-1234. Voice or 480-965-9000. TTY or visit DRS's Web site at [www.asu.edu/drs](http://www.asu.edu/drs).

**The Hispanic Mother Daughter Program.** Understanding the University Experience: The Hispanic Mother Daughter Program (HMDP) involves Hispanic girls and their mothers in preparation for the college experience. HMDP has three components: a college component, a high school component, and an eighth grade component. For more information, call 480-965-5316.

**The Upward Bound Program.** This program is designed to increase the academic skills and motivational levels of participants: low income, potential first-generation college students to the extent that they will complete high school and enter postsecondary institutions. The year-round program includes summer residential components. For more information, call 480-965-6453.

**Veterans Upward Bound.** This program is designed for veterans who wish to pursue postsecondary education but whose life experiences did not adequately prepare them for the educational requirements of today. Core preparatory instruction in writing, reading, mathematics, general science, social science, study skills, and computer literacy are provided to suit each veteran's individual needs. Veterans lacking a high school diploma can also prepare for entry into their General Education Development (GED) while participating in Veterans Upward Bound. Interest inventories, assessments and career advising are also available. For more information, call 480-965-3944.

## STUDENT LIFE

Working closely with a variety of student populations, Student Life strives to increase student involvement in the ASU experience. Opportunities for leadership and community involvement help students prepare for their roles as responsible citizens. Through their involvement in student activities, workshops, community service and student governance, students earn the qualities of student leadership and the skills to be successful students.

Programs and services are targeted to an increasingly multicultural student community as Student Life places high priority upon the promotion of civic responsibility and the celebration of diversity. An emphasis is placed upon empowerment of individual students and student organizations, including international students, and is re-entering higher education and commuter students.

ASU and Student Life encourage student volunteerism and community involvement. Concern for the senior citizen is reflected in the activities of the Cultural Diversity Committee, Student Judicial Affairs, the Reality Student Center, and the International Student Office.

The Student Life staff works closely with the academic and student support service areas of the university to ensure that students are aware of and use available resources. Staff members also act as advocates for students with their campus departments. For more information, call 480-965-6544.

## COUNSELING AND CONSULTATION

Counseling and Consultation provides confidential counseling services to all ASU students. The psychologists and counselors on staff help students with a number of types of problems or issues related to adjustment to college life. The staff is particularly committed to helping students: first-time and nontraditional students adjust to campus life.

Counseling and Consultation offers counseling support for career exploration, relationship difficulties, stress management, depression, assertiveness, eating disorders, family problems and other common student issues. Individual therapy and couples counseling are offered on a short-term basis. Counseling and Consultation also provides emergency counseling to students experiencing emotional crises.

A career interest testing program is available to both students and nonstudents. Other services available to the ASU community include consultation and outreach services to faculty and staff, academic instruction, research, a master's-level practicum training program, and an APA approved clinical internship program for doctoral students in counseling and clinical psychology. Students may schedule an initial counseling appointment either by phone (480/965 6146) or in person. After an initial personal consultation and four free individual sessions, students are charged \$10 per session. Counseling and Consultation is located in SSV B317.

**The Multicultural Advancement Program (MAP).** This program is a separate component within Counseling and Consultation and is built upon a student development model providing cultural, emotional, and academic support services to ASU's diverse student populations. MAP counselors provide this support through programs, workshops, summer institutes, academic classes, personal and educational counseling, and sponsorship of student organizations. Students may schedule an appointment with a MAP counselor by phone (480 965 6060) or in person. The MAP office is located in SSV A361.

**Testing Support Services.** Testing Support Services (TSS) offers workshops to help students prepare for the following graduate entrance exams: The Graduate Record Exam (GRE), the Graduate Management Admissions Test (GMAT), the Law School Admission Test (LSAT), and the Medical College Admissions Test (MCAT). In addition, students may select individual tutoring sessions for these exams. Students may get information about test preparation workshops by phone (480 965 6777) or in person. The TSS office is located in SSV B322.

## STUDENT HEALTH

**Services.** Student Health offers fully accredited outpatient health care to all students enrolled at ASU. The professional staff, consisting of physicians, nurse practitioners, registered nurses, psychologists, social workers, counselors, dietitians, and health educators, has special interest and training in college health care. Consultant physicians in dermatology, orthopedics, and other specialties are on site and are available by referral from a member of the Student Health professional staff.

Additional services include comprehensive women's health care, immunizations, travel clinic, a wart clinic, and an allergy clinic for students needing periodic injections. The pharmacy at Student Health provides many prescription and over the counter medications. Radiology and laboratory services are also available.

Substance abuse, mental health, and eating disorders services are available at Student Health for students experiencing problems who wish to address the situation in a confidential setting.

A notarized parental "consent to treat" form is required before a student under 18 can receive treatment at Student Health. A copy of the parental consent form may be obtained from Student Health's Web site at [www.asu.edu/health](http://www.asu.edu/health).

For information about Student Health Services at ASU East, call 480 227 6566.

**Health Education.** Student Health provides educational programs on nutrition, stress management, alcohol and other drug use and abuse, sexuality and sexually transmitted diseases, including the Human Immunodeficiency Virus (HIV). Peer education programs provide students an opportunity to gain experience in health education and to enhance presentation skills. Services and educational brochures are available at Student Health and at various locations throughout the campus.

**Hours.** Students are strongly encouraged to schedule appointments to minimize waiting time and to allow students the opportunity to establish a relationship with one clinician. Appointments are available by calling 480/965 3349. Patients with urgent health care problems may be seen at Student Health's Acute Care Clinic on a same day basis. The clinic opens at 9 A.M. Tuesdays and Thursdays and 8 A.M. other weekdays. It closes at 5 P.M.

**Fees.** Full time students are not charged for primary care visits at Student Health. Part time students are charged a visit fee. There are charges for consultant visits, continuing mental health visits, radiological procedures, laboratory procedures, medications, certain special or surgical procedures, and certain health education services. Patients receiving medical treatment off campus, such as consultations, emergency care, and hospitalization, are responsible for any resulting charges.

**Insurance.** While Student Health provides comprehensive ambulatory care, it is not a substitute for health insurance. Medical insurance coverage is strongly recommended for all students and is required for international students. Eligible students and dependents may enroll in health insurance coverage arranged by ASU. Dependents must complete an application and may require underwriting approval by the insurance carrier. The coverage assists students in paying for laboratory and radiology procedures, off campus consultations, hospitalization, surgery, emergency, and after hours care. Students may purchase health insurance through InTouch, the ASU touch tone telephone registration system, or at any registrar site. For more information, call the Student Health insurance office at 480/965 2411.

## STUDENT MEDIA

The activities of Student Media are most visible in the *State Press*. The campus newspaper, one of the largest daily newspapers in Arizona, is published five days a week by ASU students who make editorial decisions with the support of an experienced university staff director.

The *State Press* provides students with on the job training in newswriting, photography, editing, advertising, and production work. The *State Press* also addresses the many informational needs of the university community, not only through stories about the campus, and local and national events, but through paid advertisements by area merchants, campus groups, and university faculty, students, and staff. The *Diriguide* is Student Media's online community guide and includes complete listings of restaurants, hotels, apartments, transportation, campus maps, and fun places to go within the community surrounding ASU. Visit the site at [www.statepress.com](http://www.statepress.com).

Student Media publishes *Harden's Ferry Review* twice a year. This literary magazine features fiction, poetry, photog

raphy, and illustrations submitted from people throughout the country. Access the Web site at <http://news.vpsa.asu.edu/hfr/hfr.html>.

Student Media provides complete prepress services to the university community. For more information, call 480-965-7572.

### MEMORIAL UNION

The Memorial Union (MU) is a major center of student, faculty, and staff activity. Students have many opportunities for involvement, including the student directed MU Activities Board (MUAB). The MUAB plans and delivers programs and daily events through the following committees: Comedy, Culture and Arts, Film, Gallery, Marketing, Recreation, Special Events, and the Executive Board. For more information, call 480-965-6822.

The MU is staffed primarily by students, providing students the opportunity to develop leadership skills and a customer service orientation. Student employment is available in building management and maintenance, conference room setup, clerical support, film projection, food services, gallery installation, information desk services, and recreation center services.

The MU also sponsors one of the finest intercollegiate bowling programs in the United States, with men's and women's teams competing throughout the country. For more information, call 480-965-3642.

MU facilities include student lockers, a gallery, a cinema, meeting rooms, ball rooms, and a computer lab and work room. Student government and other student organization offices are located on the third floor. Recreational activities include billiards, bowling, and amusement games. The MU provides a diversity of dining options for individual and group needs and provides catering and conference services. The building houses a card and gift shop, copy center, credit union, dry cleaners, hair salon, photo shop, post office, record shop, travel agency, and four automated teller machines (ATMs). The MU operates the university information desk and lost and found. For more information, call 480/965-5728.

### ASSOCIATED STUDENTS OF ARIZONA STATE UNIVERSITY (ASASU)

ASASU is the student government of the university and the official representative of the student body in matters of university governance and budgeting. Students can take advantage of the Bike Copy Repair Service, Campus Clubs and Organizations, College Councils, Community Service Program, the Counseling and Health Advisory Committee, Entertainment Events, Environmental Issues, Government Relations, Graduate Research Support Opportunities (GRSO), Homecoming Into Devils Lecture Series, Mardi Gras, the Multicultural Awareness Board, Off Campus Student Services, Public Relations, the Safety Escort Service, Special Events, Student Legal Assistance, and the Student Senate. For more information, call 480-965-3161.

### CAREER SERVICES

Career Services provides advising for individual career planning concerns and offers information about numerous career fields and permanent positions. Students are encouraged to use the Career Development Center throughout their academic careers. A computerized career planning system

assists students in evaluating and making career choices. Career Services offers workshops and classroom presentations on career planning, interviewing skills, resume writing, and a myriad of additional career related topics. Advisors are available to assist students on an individual basis in career planning and employment.

Hundreds of employers from business, industry, government, social service agencies, health organizations, and educational institutions come to ASU to interview students seeking permanent positions and career related summer, intern, and co-op employment. Career Services facilitates these interviews for both employers and students to meet each group's needs and interests. In addition, career and job fairs are scheduled throughout the year.

The agency's services support students' career development throughout their college experience, and Career Services encourages participation in programs as early as the student's freshman year. The offices are located in SSV C359 and C363. For more information, call 480-965-2350.

### STUDENT RECREATION COMPLEX AND RECREATIONAL SPORTS

Students who want to get involved or meet people with similar interests should visit the Student Recreation Complex (SRC) to learn more about Recreational Sports. Student Affairs' Recreational Sports is one of the largest programs of its kind in the country, serving more than 20,000 students annually. Programs offered include intramural sports, informal recreation, fitness, aquatic and sports skills classes, outdoor recreation, children and family programs, sport clubs, adaptive recreation for individuals with long or short term disabilities, a wellness center, safety education, and special events.

Located on the south end of Palm Walk, the SRC is one of the finest student recreation facilities in the United States. Features include a variety of resistance and cardiorespiratory equipment, a 9,000 square foot weight room, three large gymnasiums, 14 indoor racquetball courts and one squash court, martial arts, aerobics and sport club rooms, outdoor equipment rental, and an adaptive weight area. Outdoor facilities include a lighted, multiuse complex with four fields, a .43 mile perimeter walking and jogging path, four sand volleyball courts, 14 tennis courts, and a 70 meter swimming pool with two movable bulkheads that allow the pool to be divided into three parts for simultaneous multiuse programming.

For more information, stop by for a tour or call 480-965-8900.

### ARIZONA PREVENTION RESOURCE CENTER

The Arizona Prevention Resource Center (APRC) is a partnership among ASU, the Governor's Division of Drug Policy, the Arizona Department of Education, and the Arizona Department of Health Services.

The APRC serves as a centralized source for individuals, schools, and communities throughout Arizona to support, enhance, and initiate programs focused on the prevention of the use of tobacco products and the use and abuse of alcohol and other drugs, gangs and violence, and other areas, such as health promotion, domestic violence, and dropout prevention. The APRC operates in the toll-free program areas.

1. clearinghouse—to provide accurate, timely, and personalized prevention information and materials through in-house collection, access to national sources, and linkages between prevention programs in Arizona;
2. training and technical assistance—to provide high quality, responsive training and technical assistance for organizations and individuals undertaking prevention programs in local communities and schools;
3. evaluation and research—to coordinate and provide leadership for a statewide evaluation strategy for alcohol and other drug prevention programs; to produce an annual inventory of substance abuse prevention, education, and treatment programs in Arizona; to design and conduct contracted evaluations of community-based prevention programs; and to promote quality and accountability in all aspects of APRC operations; and
4. planning and special projects—to promote effective collaboration between prevention and treatment program leadership, to broaden the funding base for prevention programs, and to develop and strengthen partnerships.

For more information, call 480/727-2772 or write

ARIZONA PREVENTION RESOURCE CENTER  
ARIZONA STATE UNIVERSITY  
PO BOX 872208  
TEMPE AZ 85287-2208

Information can also be obtained by fax (480/727-5400 or 1-800-432-2772, toll-free in Arizona, TTY) or at



Sparky fires up the crowd.

Tim Trumble photo

ASU DOWNTOWN CENTER  
BUILDING B  
641 EAST VAN BUREN SUITE B2  
PHOENIX AZ

The Arizona Drug and Gang Prevention Resource Center (ADGPRC), located with the APRC, provides similar information and technical assistance for communities to help them focus strategically on drug and gang prevention issues.

The ADGPRC can be contacted at 480/727-5015 or toll-free at 1-800-981-3702.

## INTERCOLLEGIATE ATHLETICS

The university is a member of the National Collegiate Athletic Association, Division I, and the Pacific-10 Conference. The university has 21 varsity intercollegiate sports and more than 500 participants. Intercollegiate athletics at ASU are governed by a board of faculty, students, and staff under the regulations of the Arizona Board of Regents, the NCAA, the Pacific-10 Conference, and the university. Policies are administered by Intercollegiate Athletics. All athletic grants-in-aid and scholarships are administered in coordination with Intercollegiate Athletics.

## RELIGIOUS ACTIVITIES

Various religious centers representing most major religious groups are available near ASU Main and provide students with opportunities to participate in programs of religious worship and to meet other students through social activities. For more information, call the Campus Interfaith Council at Danforth Chapel, 480/965-3570.

## OTHER OPPORTUNITIES FOR STUDENT INVOLVEMENT

**Dance.** The Department of Dance and Dance Arizona Repertory Theatre, a student touring outreach company, present 12 to 14 faculty- and/or student-directed concerts a year. Interested students should attend open auditions, held at the start of each semester. For more information, call 480/965-5029.

**Forensics.** The Sun Devil Forensic squad, associated with Pi Kappa Delta, national forensic honorary association, travels to trophy tournaments across the country. For more information, call Dr. Clark D. Olson, director of Forensics, at 480/965-3825.

**Communication Activities: Performances.** Participants write, compile, and perform scripts for presentation in diverse on- and off-campus settings through the Department of Communication. For more information, call 480/965-4111 or 480/965-5061.

**Music.** Performing organizations with the School of Music provide opportunities for involvement and credit, including bands, Lyric Opera Theatre, symphony orchestra, and university choral organizations. For more information, call the School of Music at 480/965-3371.

**Theatre.** The University Theatre presents four to six faculty-directed productions and eight to 14 student-directed productions a year. Audition information is available from the Department of Theatre, GHALL 232, 480/965-5359.

# Fees, Deposits, and Other Charges

The Arizona Board of Regents reserves the right to change fees and charges without notice. The current semester *Schedule of Classes* generally reflects up to date fee amounts.

The following fees apply to both credit and noncredit (audit) registrations and are subject to change.

## DEFINITIONS

*Resident tuition* refers to the charge assessed to all resident students who register for classes at ASU. *Nonresident tuition* refers to the charge assessed to nonresident students, as established in Arizona Board of Regents' Policy 4-102.

## ACADEMIC YEAR TUITION

The resident and nonresident tuition for fall and spring semesters is shown in the "1999-2000 Resident and Nonresident Tuition" table on this page. The amounts listed are per semester hour each academic term. For more information on classification for fee status, see "Residency Classification Procedures and Policies," page 50.

Students registered for seven or more hours are considered full time for tuition payment purposes. See "Enrollment Verification Guidelines," page 73.

*Note:* The rate for one hour is charged if the student is registered for only a zero hour class.

**Graduate College Differential Fees.** Certain graduate programs assess an additional differential fee. These fees differ according to college and/or program. Contact your program advisor for details on these fees.

**Off-Campus and Independent Learning Courses.** For information on fees for off campus and independent learning courses, see "Distance Learning Technology," 256.

**Summer Sessions Fees.** The 1999 registration fee per semester hour is \$115 except for law students. The registration fee per semester hour for law students is \$259. For more information, see "Summer Sessions," page 471, and the *Summer Sessions Bulletin*.

## OTHER FEES, DEPOSITS, AND CHARGES

**Special Class Fees and Deposits.** Certain university classes require payment of fees or deposits for materials, breakage, and rentals. These fees and deposits are listed in the *Schedule of Classes* for each semester. See the "Special Class Fees and Deposits for ASU Main and ASU East" table, page 54.

**Student Recreation Complex Fee.** All students (except university employees) who take at least one class at ASU Main must pay a mandatory Student Recreation Complex fee. Full time (seven or more hours) students are charged \$25 per semester. Part time students pay \$12 per semester, and summer students pay \$2 per semester hour. See the current semester *Schedule of Classes* for more information.

**Financial Aid Trust Fee.** All students must pay a financial aid trust fee. Full time (seven or more hours) students are

## 1999-2000 Resident and Nonresident Tuition\*

Hours	Resident	Nonresident
1	\$ 115.00	\$ 389.00
2	230.00	778.00
3	345.00	1,167.00
4	460.00	1,556.00
5	575.00	1,945.00
6	690.00	2,334.00
7	1,094.00	2,723.00
8	1,094.00	3,112.00
9	1,094.00	3,501.00
10	1,094.00	3,890.00
11	1,094.00	4,279.00
12 or more	1,094.00	4,670.00

\* In addition to tuition, students are charged other fees (e.g., the Student Recreation Complex fee and financial aid trust fee).

charged no more than one percent of the current tuition. The fee for students enrolled six or fewer hours is half that charged full time students. The total summer sessions fee does not exceed the amount for a full time student. Fees collected from students are matched by the State of Arizona and used to create a Financial Aid Trust Fund, from which student grants are awarded under the usual financial aid eligibility criteria available at the ASU Student Financial Assistance office in the Student Services Building.

**Arizona Students' Association (ASA) Fee.** The ASA is a nonprofit lobbying organization that represents Arizona's public university students to the Arizona Board of Regents, State Legislature, and U.S. Congress. During 1997, students at the state universities voted to change the mechanism for funding the ASA. A \$1 fee will be charged to each student each semester. Any refunds for this fee will be provided through the ASA Central Office at 480 966 6358.

**Late Registration.** The fee assessed on registrations on or after the first day of each session is \$35. A \$35 late fee is also assessed on registration payments received after the fee payment deadline but processed before the class enrollment purge.

**Transcripts.** Official transcripts for currently enrolled students are \$1 each. Official transcripts for nonenrolled students are \$5 each. Additional copies ordered at the same time are \$1 each. Requests for official transcripts should be made at least two weeks in advance of the time desired.

### Copies of Education Records Other Than ASU

**Transcripts.** For fewer than six pages, there is no charge. For six to 10 pages, the total charge is \$2. For 11 to 15 pages, the total charge is \$3. Copies of additional pages cost \$1 per each five pages copied.

**Graduation Application or Reapplication.** The fee for undergraduates is \$12, for graduates, \$17. A late fee of \$5 is

added to the charge note above if not paid prior before the deadlines shown in the University Calendar, page 17.

**Comprehensive Examination.** This fee is paid by students seeking to establish credit by examination and is \$750 per semester hour.

**Private Music Instruction.** The fee for one half hour of instruction weekly is \$40. The fee for one hour of instruction weekly is \$60. The fee for more than one hour of instruction weekly for music majors only is \$60.

**Musical Instrument Rental Charge.** The charge for use of university-owned musical instruments is \$25. Consult the School of Music for specific information.

**Binding and Microfilm Fees.** The binding fee for a thesis or dissertation is \$17 per copy. This fee is subject to charge. Additional charges may be required depending on the size and nature of the document. The dissertation microfilm fee is \$50 and is subject to charge.

**Sun Card/ID Card.** The replacement fee is \$10.

**Parking Decals.** A parking decal must be purchased, in person or by using the Park Smart touch-tone telephone system 480-921-PARK-7273, for motor vehicles parked on campus except in areas where metered parking or visitor lots are available. Photo identification is required. Annual decals range from \$50 to \$129 for controlled access parking. Decals are sold on a first come, first served basis. For more decal sales information, call 480-965-6241 or visit the Web site at [www.asu.edu/dps/pts](http://www.asu.edu/dps/pts).

Each vehicle registered at ASU Parking and Transit Services must comply with Arizona emission standards (ARS § 15-1627G) during the entire registration period. The fee for this emission inspection is \$75 to \$35 per vehicle.

Everyone is encouraged to support travel reduction measures by using mass transit, the university shuttle bus, car pooling, bicycling, or walking whenever possible. See "Transportation," page 45 for more information.

**Parking Violations.** Due to high density parking regulations are strictly enforced. Fines range from \$5 to \$100. Appeals to parking citations may be filed within 14 calendar days to Parking and Transit Services and, after payment, may be further appealed to the Parking Citation Appeals Board. Unpaid parking citations are delinquent financial obligations subject to provisions of the "Delinquent Financial Obligations" section, page 49. The vehicle of any person owing three or more unpaid parking citations or \$100 in unpaid parking citations is subject to impoundment. An \$85 minimum fee is assessed if impoundment is required. For more information call 480-965-4527.

**Returned Checks.** Checks returned by a bank are assessed a \$15 service charge with repayment needed within five business days of notification. A second \$15 service charge is made if the returned check is not repaid within this five-day period. Repayment of a returned check must typically be in cash.

The university may have arrangements with its bank to redeposit automatically for a second time checks for which there are insufficient funds. No service charge is assessed by ASU until a check is returned to ASU. However, the payer

may be assessed a service charge by the payer's financial institution.

Students paying registration fees and tuition with a check that is subsequently not honored by a financial institution are subject to involuntary withdrawal from the university if repayment is not made. All students involuntarily withdrawn are charged tuition and/or registration fees according to the standard refund schedule as of the involuntary withdrawal date, as determined by the university.

**On-Campus Housing.** The cost of Main campus housing varies. In 1998-99 the most typical cost was \$2,780 per academic year. Meal plans are purchased separately. For more information, see "Residential Life," page 41, or call 480-965-3515.

## TRANSPORTATION

To reduce air pollution and traffic congestion, students are encouraged to travel to and from campus by means other than automobile. Nearby on-campus parking is limited and tightly controlled.

Alternative transportation modes are used by thousands of ASU students. ASU is served by a Phoenix area regional bus service; monthly and reduced fare semester passes are available on campus. In addition, an inexpensive express shuttle runs between ASU Main in Tempe and ASU West in northwest Phoenix; another shuttle runs among ASU Main, Mesa Community College, and ASU East in Mesa; and a Free Local Area Shuttle (FLASH) is available around the periphery of ASU Main.

Bicycle ridership at ASU is estimated to be more than 15,000 students daily. Ample racks in many locations enable the parking and securing of bicycles. Bicycle use is restricted only in those areas of campus where pedestrian traffic is sufficiently heavy to make such use a hazard. The Bike Co-op Repair Service provides assistance with bicycle maintenance.

Also, careful class scheduling, when possible, can reduce a student's transportation needs. For more information on commute alternatives, call 480-965-1072.

## PAYMENT METHODS AND DEADLINES

**InTouch.** The InTouch system, at 480-350-1500, allows students to register for classes, to drop/add, and to make fee payment from any touch-tone phone. Students paying fees with available financial aid, debit cards, Visa, or MasterCard must use the InTouch system. Refer to the *Schedule of Classes* for available dates and times and more information about the InTouch system.

**Debit/Credit Cards.** ASU accepts debit cards, Visa, and MasterCard. Debit/credit card payments through InTouch are processed online with the bank. See the *Schedule of Classes* for information about using debit/credit cards by mail or campus payment boxes.

**Check.** Checks payable for the exact amount of charges and without a restrictive endorsement are generally acceptable, except for students on check use suspension due to a previously returned check.

**Financial Aid.** Students receiving financial aid may use their expected aid to pay university charges, including tuition and fees. Students who wish to do so must follow



specified procedures. See the current semester *Schedule of Classes* for more information.

**Veterans Deferred Payment.** The Veterans Readjustment Assistance Act allows veterans to apply for deferred payment of registration fees, books, materials, and supplies required for courses. To assist eligible students, a Veteran Promissory Note may be issued deferring payment during their first semester of benefits. Contact the Veterans Services Section at SSV 148 or call 480-965-7723 for information on meeting the necessary requirements. The university may deny this privilege with previous delinquent obligations.

**Payment Deadlines.** Fees must be paid by the deadline dates and times indicated or the registration is voided. A fee payment deadline is printed on all Schedule Billing Statements and in the *Schedule of Classes*.

**REFUNDS**

**Academic Year Resident and Nonresident Tuition.** Students withdrawing from school or individual classes receive a refund as described in the "Fall and Spring Withdrawal Refunds" table.

**Fall and Spring Withdrawal Refunds**

Withdrawal Date	Refund
Before first day of the semester	100%
One through 7 calendar days	80%
8 through 14 calendar days	60%
15 through 21 calendar days	40%
22 through 28 calendar days	20%
After the 28th calendar day	No refund

\* A \$35.00 processing fee is subtracted per session.

The university provides a prorated refund for first-time students receiving financial aid; therefore, the refund schedule is the minimum amount refundable to these students.

Withdrawal occurs on the calendar day that withdrawal is requested, either in person at a registrar site or by phone using InTouch, the ASU touch-tone telephone system for registration and fee payment. Students withdrawing for medical or other extenuating circumstances must contact their college for refunds that may be available under these circumstances.

**Summer Sessions Fees.** Students withdrawing from any summer session or individual classes receive a refund as described in the "Summer Sessions Withdrawal Refunds" table. *Refunds are based on the session days and not the class meeting dates for any part-time class.*

**Summer Sessions Withdrawal Refunds**

Withdrawal Dates	Refunds
Before first day of session	100%
First and second days of session	50%
Third day of session	60%
Fourth day of session	40%
Fifth day of session	20%
After fifth day of session	No refund

\* A \$35 processing fee is subtracted per session.

**Special Class Fees and Deposits.** After the first week of classes, refunds, if any, are determined only by the department or school offering the course. Refund determination is based on withdrawal date, type of activity, and costs already assessed by the department or school.

**Private Music Instruction.** If a student must drop a music course because of illness or other emergency beyond the student's control, more than half of the instruction charge may be refunded, as determined by the School of Music.

**Late Registration.** This fee is not refundable.

**Student Recreation Complex Fee.** This fee is refundable only upon complete withdrawal in percentage increments per the refund schedule.

**Financial Aid Trust Fee.** This fee is not refundable.

**Official Transcripts.** Overpayments by mail of \$5 or less are only refunded by specific request.

**Graduation Fee.** Overpayments by mail of \$5 or less are refunded only by specific request.

**Residence Halls.** Refunds to students departing from ASU Main residence halls before the end of the academic year are computed on the following basis:

*Charges and Deposits.* Housing payments and deposits are refunded as prescribed by the Residential Life License Agreement that students sign when they apply for residence hall accommodations. Students should refer to this document and the *Schedule of Charges and Deadlines* for specific information on refunds.

**Other University Charges.** Other university charges are normally not refundable, except for individual circumstances.

**Payment of Refunds.** Refunds require student identification and are made payable only to the student for the net amount due the university. When the last day of a refund period falls on a weekend or holiday, a withdrawal form must be submitted to one of the registrar sites during operating hours on the workday preceding the weekend or holiday. Refunds are normally paid by check, payable to the student, and are mailed to the student's local address.

**Parking Decals.** Prorated refunds are available through the last business day in April.

**Forfeiture of Refunds.** Refunds are subject to forfeiture unless obtained within 90 days of the last class day of the semester for which the fees were originally paid.

**DELINQUENT FINANCIAL OBLIGATIONS**

Arizona Board of Regents' Policy 4-03B, which applies to ASU, states the following:

1. Each university shall establish procedures to collect outstanding obligations owed by students and former students.
2. Each university shall maintain a system to record all delinquent financial obligations owed to that university by students and former students.

3. Students with delinquent obligations shall not be allowed to register for classes, purchase parking decals, receive cash refunds, or obtain transcripts, diplomas, or certificates of program completion. The university may allow students to register for classes, obtain transcripts, diplomas, or certificates of program completion if the delinquent obligation is \$25 or less.
4. Unpaid obligations shall remain a matter of record until students and former students satisfy their financial obligations or until satisfactory arrangements for repayment are made with the university.
5. The university may write off delinquent financial obligations of students according to accepted accounting principles and after appropriate collection efforts. No such write off shall operate to relieve the student of liability for the obligation nor shall such write off entitle the student to release of any transcripts, diplomas, certificates of program completion, or to register for further university classes until such obligation is actually paid.
6. Each university shall include this policy in its bulletin or catalog.

A late charge of \$10 is made for any balances due the university not paid within 30 days of the initial due date, with a second \$10 late charge being made if these amounts are not paid within 30 days of the first late charge. Procedures to be followed for disputed charges are available from the Accounts Receivable Section of the Business Services Office, located in ADM A109.

### RESIDENCY CLASSIFICATION PROCEDURES AND POLICIES

The Arizona Board of Regents is required by law to establish uniform guidelines and criteria for classifying students' residency to determine those students who must pay nonresident tuition. The following is a summary of the general guidelines used to determine residency for tuition purposes. All of the evidence is weighed under the presumption that a nonresident student's presence in Arizona is primarily for the purpose of education and not to establish domicile and that decisions of an individual about the intent to establish domicile are generally made after the completion of an education and not before.

To obtain resident status for tuition purposes, independent students must establish their residence in Arizona at least one year immediately before the last day of regular registration for the semester in which they propose to attend ASU. Arizona residence is generally established when individuals are physically present in the state with the intention of making Arizona their permanent home.

Mere physical presence in Arizona for one year does not automatically establish residency for tuition purposes. Adult students and emancipated minors must combine physical presence in Arizona for one year with objective evidence of their intent to make Arizona their permanent home. If these steps are delayed, the one year period is extended until both presence and intent have been demonstrated for one full year. In addition to physical presence and intent, the student must demonstrate financial independence for the two tax years immediately preceding the request for resident classification. The student must demonstrate objective evidence of self support and that he or she was not claimed as an

income tax deduction by his or her parents or any other individual for two years. An adult student is defined as being at least 18 years of age at the beginning of the domicile year. For a complete definition of an emancipated minor, refer to the Arizona Board of Regents' residency classification policies, available in the Residency Classification Section, SSV B115.

No person is considered to have gained or lost resident status merely by attending an out of state educational institution.

**Aliens.** Students who are aliens are subject to the same requirements for resident status as are U.S. citizens. In establishing domicile, aliens must not hold a visa that prohibits establishing domicile in Arizona.

**Refugees.** Refugees may qualify as resident students by virtue of having been granted refugee status in accordance with all applicable laws of the United States and having met all other requirements for residence in Arizona.

#### Exceptions to the General Residency Rule

Students may be eligible for resident status for tuition purposes if they can meet one of the following criteria on or before the last day of regular registration.

**Legal Dependents.** If a student and his or her parents are domiciled in Arizona and have not met the one year residency requirement but the parents are entitled to claim the student as a dependent for federal and state tax purposes, the student may be eligible for resident status for tuition purposes.

**Transferred Employees.** If students are domiciled in Arizona and have not met the one year residency requirement but are employees or spouses of employees who have been transferred to Arizona by their employers for employment purposes, the students may be eligible for resident status for tuition purposes.

**Members of the Military.** If students are not domiciled in Arizona but are members of the U.S. Armed Forces stationed in Arizona or are the spouses or dependent children of a member (as defined in A.R.S. § 43-1001), the students may be eligible for resident status for tuition purposes. If military service is concluded while they are enrolled, students do not lose resident status while they are continuously enrolled in a degree program. If individuals are domiciled in Arizona immediately before becoming members of the U.S. Armed Forces, they do not lose resident status because of their absence while on active duty with the military as long as they maintain Arizona affiliations and file Arizona state tax.

**Native Americans.** Students who are members of a Native American tribe whose reservation lies both in Arizona and an adjacent state and who are residents of that reservation may be eligible for resident status for tuition purposes.

#### Procedures for Establishing Residency Status

All students are responsible for obtaining residency classification for tuition purposes before registering and paying their fees. This procedure requires students to complete and file a domicile affidavit form. This form is required of all new and returning students as part of the admission or readmission process. Students classified as nonresidents who

1999 2000 Typical Student Budgets

Item	Dependent			Independent	
	At Home	On Campus	Off Campus	On Campus	Off Campus
Rent	\$ 980	\$ 3,010	\$ 3,785	\$ 3,000	\$ 4,950
Food	2,000	2,000	2,000	2,000	2,000
Personal	2,575	2,575	2,575	3,150	3,150
Total living <sup>1</sup>	\$ 5,555	\$ 7,585	\$ 8,360	\$ 8,160	\$ 10,100
Resident tuition	\$ 2,188	\$ 2,188	\$ 2,188	\$ 2,188	\$ 2,188
Special fees	73	73	73	73	73
Books/supplies	700	700	700	700	700
Resident total	\$ 8,516	\$ 10,546	\$ 11,321	\$ 11,121	\$ 13,061
Additional tuition for nonresidents <sup>2</sup>	\$ 7,152	\$ 7,152	\$ 7,152	\$ 7,152	\$ 7,152
Non resident total	\$ 15,668	\$ 17,698	\$ 18,473	\$ 18,273	\$ 20,213

<sup>1</sup> Loan fees are not included in this amount

<sup>2</sup> Actual amounts of nonresident tuition are shown in the "1999 2000 Resident and Nonresident Tuition" table, page 47

believe they may qualify for resident status must file a petition with the Residency Classification Section. This petition must be filed by the last day of regular registration. A student seeking resident status must also file supporting documentation necessary to provide a basis for resident classification (source[s] of support, driver's license, voter's registration, vehicle registration, etc.) Students whose residency petitions are in process at the fee payment deadline are responsible for paying nonresident tuition and fees. However, an appropriate refund is issued if residency is later granted for that semester.

Any student found to have made a false or misleading statement concerning residency or tuition status is subject to dismissal from the university.

Failure to file a timely written petition for reclassification of residency status for tuition purposes constitutes a waiver of the student's right to apply for the given semester. Petition deadlines are published each semester in the *Schedule of Classes*. Extensions to the deadlines are not permitted.

Residency classification is an extremely complex issue. The information presented here is a summary and does not address each individual's situation; therefore, students are encouraged to make a personal visit to the Residency Classification Section to discuss their individual circumstances as soon as possible. Guidelines for determination of residency for tuition purposes are subject to review and change without notice. For more information, call the Residency Classification Section at 480 965 7712 or refer to [www.asu.edu/registrar/residency](http://www.asu.edu/registrar/residency).

## Financial Aid

The primary responsibility for financing a college education belongs to students and their families (see the "1999 2000 Typical Student Budgets" table on this page). Student Financial Assistance helps students meet this responsibility by evaluating applications through the use of a standard financial need analysis system. Student Financial Assistance determines the cost of a student's attendance as well as how much students and their families can afford to contribute

toward that cost. It is the student's responsibility to complete all applications in an accurate and timely manner and to notify Student Financial Assistance of any changes in circumstances that might affect eligibility (e.g., loss of parent's income or change in residency classification). Financial assistance is available as scholarships, grants, loans, and employment. This aid has been made available collectively by the university, alumni, private foundations, civic groups, individuals, and state and federal governments.

To be considered for financial aid, all students must complete an application separate from the admission application. The Free Application for Federal Student Aid (FAFSA) is the only required application. It is not necessary to complete any other application that may require an application fee. The form should be completed in January or February preceding the academic year the student anticipates attending ASU. The priority date for applying is March 1. Applications completed by this date are considered for all grant funds. Applications completed after this date are processed; however, they are considered late applications. Late applications may receive limited grant dollars and a higher proportion of loan or work dollars.

A Statement of Need Application Acknowledgement is sent to all applicants. This letter estimates expenses and contribution for the school year and specifies the amount of the applicant's financial need. Students are notified by mail regarding any additional items or documents needed to complete their applications. These items may include copies of federal tax returns, proof of valid visa, and proof of registration with the Selective Service. Students receive a separate Financial Aid Notification. This letter informs them of the types and amounts of aid they are eligible to receive. Applicants should read carefully all correspondence received from Student Financial Assistance.

Students receiving aid from Student Financial Assistance are required to meet minimum standards of satisfactory academic progress. In addition to maintaining the minimum GPA defined for good academic standing, undergraduate students awarded on a full-time basis must complete a minimum of 24 semester hours within the academic year. Failure

to meet these standards results in the suspension of aid funds for subsequent semesters until the deficiency is satisfied.

Students can access personal information regarding financial aid through the Financial Aid Services Through Technology (FASTT) phone system at 480-965-4400 or on the FASTT Web site at [www.asu.edu/fastt](http://www.asu.edu/fastt). Students can check on:

1. Documents still to be completed for financial aid file;
2. Award information; and
3. Financial aid forms, both for printing on a printer for mailing and interactive forms that can be sent across the Web.

For help on how to use the Web, contact SURF at 480-965-2410.

## TYPES OF FINANCIAL AID AND MAJOR PROGRAMS

More than 31,000 students receive financial aid resources that total more than \$242 million. There are four categories of financial aid: scholarships, grants, loans, and employment.

### Scholarships

There are two sources of scholarships at ASU: university-funded scholarships and private donor scholarships. Many scholarships are offered on the basis of academic merit. However, financial need criteria may also be included in the selection of recipients. Other considerations are GPA, leadership qualities, and community service.

The Scholarship Office coordinates all scholarship programs. High school students should contact their high school counselors to determine the appropriate process for obtaining a variety of scholarships available to entering freshmen. Other undergraduate students may contact the Scholarship Office. In addition, many academic units provide scholarship funding and select students based on a variety of criteria, which include artistic talent, musical ability, and athletic performance.

**New Scholarship Tax Credits.** Students may be eligible for either the Hope Scholarship or the Lifetime Learning tax credits. Additional information about these tax credits is available on the Web at [www.asu.edu/register](http://www.asu.edu/register).

Consult a personal tax adviser about qualifications for the Hope Scholarship and Lifetime Learning tax credits.

**Private Donor Scholarships.** More than 7,200 students at ASU receive private donor scholarships. Most of these scholarship funds are provided by employers, private individuals, organizations, and corporations. In most cases, the private donor specifies the criteria used by the Scholarship Office to identify candidates for a particular scholarship.

**University Scholarships.** More than 5,400 ASU students receive a scholarship from university sources that is generally in the value of tuition and/or fees. The largest source for university scholarships is the waiver program authorized by the Arizona Board of Regents. In addition, many scholarships are funded from a general endowment fund. Some of the typical areas targeted for these scholarships are top academic seniors in Arizona high schools, underrepresented minority students, students who demonstrate leadership

students who demonstrate scholastic or scientific abilities, students with disabilities, and nontraditional students.

### Grants

Like scholarships, grants are provided to students without repayment or service obligation. However, the criterion to receive a grant is generally a calculation of financial need. More than 12,000 ASU students receive some form of a grant.

**Federal Pell Grant.** The Federal Pell Grant program is funded by the federal government and is a basic financial resource to low- and moderate-income students. Eligibility is determined through the financial aid application process by the federal government. Under this program, the university converts entitlements to cash grant payments. A student may be eligible for a maximum grant of \$3,175 per year.

**Federal Supplemental Educational Opportunity Grant.** Funds are received from the federal government by the university, which is required to match the funds. Student Financial Assistance then determines the eligibility of a student based on a specific calculation of exceptional financial need. Generally, recipients of the Federal Pell Grant are eligible to receive a Federal Supplemental Educational Opportunity Grant. Maximum grants are \$1,000.

**Leveraging Educational Assistance Partnership (LEAP).** This program is a three-partner program of federal, state, and university funding. Students with a high financial need may receive this particular form of funding. It is restricted to residents of Arizona. Maximum grants are \$1,500.

**Arizona Trust Fund.** This grant source is provided in partnership between ASU students and the state legislature. These funds are provided primarily to resident, undergraduate, or underrepresented students with a high financial need. Maximum grants are \$1,500.

**University Grant.** University Grants are generally reserved as the last financial aid program to be used to resolve a student's need. Grants range from \$200 to \$2,000.

### Loans

More than 70,000 students borrow approximately \$132 million annually. A variety of loan programs provide assistance to students and, in some cases, parents in the financing of a university education.

**William D. Ford Direct Student Loan.** Through the William D. Ford Direct Student Loan program, the federal government loans money to students based on the university's determination of the student's financial need and cost of education, and the student does not begin repayment until after graduation. Under this program there are two loan types: subsidized and unsubsidized. With a Subsidized Direct Student Loan, the federal government pays the interest on the loan principle during the student's in-school status, grace, and other authorized periods of deferment. The school bases eligibility for a subsidized loan on the student's financial need which is determined by subtracting the expected family contribution from the cost of education. The school may determine the student to have eligibility for an Unsubsidized Direct Student Loan. In this program, the federal government does not pay the interest during the stu-

dent's in-school status, grace, or other authorized periods of deferment; thus, as the student proceeds through school interest will accrue and will be added once the student enters repayment. Otherwise, conditions and terms for the two programs are the same.

There is a variable interest rate that is adjusted every July 1. Interest cannot exceed 8.25 percent. The federal government provides several options for repayment once the student has left school. For students who are considered dependent based on their financial aid application, the following total annual loan limits for subsidized and unsubsidized apply: freshmen may borrow up to \$2,625 per year; sophomores, up to \$3,500 per year; and juniors and seniors, up to \$5,500 per year. For students who are considered independent, the following annual loan limits apply: freshmen may borrow up to \$6,625, of which only \$2,625 can be subsidized; sophomores, up to \$7,500 of which only \$3,500 can be subsidized; and juniors and seniors, up to \$10,500, of which only \$5,500 can be subsidized.

**Federal Perkins Loan.** The Federal Perkins Loan program is funded by the federal government; the school is the actual lender, and repayments after graduation are made to the university at a 5 percent interest rate. Like the Subsidized Student Loan, no interest accrues on the Perkins Loan during the enrollment period. ASU students could be awarded a maximum loan of \$3,000. If funding is available, deferment and cancellation provisions may apply to graduates working in community service, qualifying law enforcement, and teaching occupations.

**Parent Loan for Undergraduate Students.** Under the Parent Loan for Undergraduate Students (PLUS), parents may borrow money from the federal government on behalf of their dependent students. With this loan, interest is not deferred and repayment begins 60 days after disbursement of the loan to the parent. The PLUS approval is based on the parent's credit history. If parents are determined ineligible for a PLUS and students need additional funds, they should contact the Student Financial Assistance office for their eligibility for an Unsubsidized Direct Student Loan. The interest rate for the PLUS loan is variable, but cannot exceed 9 percent through July 1, 1999. The maximum loan amount is determined by subtracting all other financial aid from the student's cost of education.

### Employment

Approximately 7,000 students earn \$26 million from on-campus part-time student employment programs.

**Federal Work-Study.** Funds for this program are provided on a matching basis by the federal government and the university. Students employed under this program receive the same pay rates as other students being employed at the university. In this program, students must demonstrate a financial need. Employers are encouraged to hire minority and needy students.

**University Hourly.** The university, with its own resources, hires many students on a part-time basis. Although the jobs are similar to those under the Federal Work-Study Program, the university provides the entire amount of the student's wage.

**Part-Time Off-Campus.** The university receives requests for assistance from many agencies and corporations

throughout the area to help them recruit and hire students on a part-time basis. The referral service at the university provides opportunities for students not only to earn funds to support their education but to gain experience in the areas of their majors or career interests.

### Taxability of Financial Aid Programs

Scholarships, grants, fellowships, and stipends (but not loan funds) are taxable income to the recipient, except for the portion of these funds used for tuition, registration, and other university fees, or books, supplies, and equipment required for the courses being taken. Special tax regulations also apply to nonresident alien students and may require withholding of taxes at the time of aid disbursements to these individuals. Information on the taxability of scholarships can be obtained from the following Internal Revenue Service (IRS) publications and forms: *Publication 4--Student's Guide to Federal Income Tax*; *Publication 519 - U.S. Tax Guide for Aliens*; *Publication 520--Scholarships and Fellowships*; Form 1040EZ and Instructions-- *Income Tax Return for Single and Joint Filers with no dependents*; and Form 1040NR and Instructions-- *U.S. Nonresident Alien Income Tax Return*.

These publications and forms can be obtained from the IRS at its toll-free number 1-800-829-FORM (3676). These publications and forms can also be accessed online at [www.irs.ustreas.gov/prod/forms\\_pubs](http://www.irs.ustreas.gov/prod/forms_pubs).



ASU Cronkite Games

Tim Trumble photo

Special Class Fees and Deposits for ASU Main and ASU East<sup>1</sup>

## Special Fees

ADE 321	Architectural Studio I	\$175.00
ADE 322	Architectural Studio II	175.00
ADE 421	Architectural Studio II	175.00
ADE 422	Architectural Studio IV	175.00
ADE 510	Foundation Architectural Studio	175.00
ADE 511	Core Architectural Studio I	175.00
ADE 512	Core Architectural Studio II	175.00
ADE 521	Advanced Architectural Studio I	175.00
ADE 522	Advanced Architectural Studio II	175.00
ADE 621	Advanced Architectural Studio III	175.00
ADE 622	Advanced Architectural Studio IV	175.00
AMT 214	Commercial/Instrument Ground School I	100.00
AMT 280	Aerospace Structures, Materials, and Systems	10.00
AMT 322	Commercial/Instrument Ground School II	100.00
AMT 387	Multimedia Ground School	17.00
ART 115	Three Dimensional Design	10.00
ART 201	Photography I	25.00
ART 214	Life Drawing I	25.00
ART 227	Watercolor I	45.00
ART 231	Sculpture I	40.00
ART 260	Ceramics for Nonmajors	25.00
ART 26	Ceramic Survey	25.00
ART 272	Jewelry I	25.00
ART 274	Wood I	25.00
ART 276	Fibers I	25.00
ART 294	ST Fibers for Nonmajor	25.00
ART 294	ST Introduction to Printmaking	30.00
ART 301	Photography II	25.00
ART 304	Advanced Photography	25.00
ART 305	Color Photography I	30.00
ART 314	Life Drawing II	25.00
ART 315	Life Drawing III	25.00
ART 324	Painting III final only	40.00
ART 325	Figure Painting	25.00
ART 327	Watercolor II	45.00
ART 331	Sculpture II	40.00
ART 332	Sculpture III	40.00
ART 351	Intaglio I	40.00
ART 352	Lithography I	40.00
ART 354	Screen Printing I	35.00
ART 355	Photo Process for Printmaking I	25.00
ART 360	Ceramic Throwing	25.00
ART 364	Ceramic Handbuilding I	25.00
ART 365	Ceramic Handbuilding II	25.00
ART 372	Jewelry II	15.00
ART 373	Metalworking I	15.00
ART 374	Wood II	25.00
ART 376	Fibers Loom Techniques	25.00
ART 377	Surface Design	25.00
ART 394	ST: Carving	25.00
ART 394	ST: Ceramics	15.00
ART 394	ST Fibers Design for Nonmajors	25.00
ART 394	ST: Relief Printmaking	35.00
ART 394	ST Turning	25.00
ART 401	Nonsilver Photography	30.00
ART 403	Senior Photographic Projects	25.00
ART 404	Portraiture Photography	25.00
ART 405	Advanced Color Photography	35.00
ART 417	View Camera	15.00
ART 414	Advanced Life Drawing	25.00
ART 415	Art Anatomy	20.00
ART 425	Advanced Figure Painting	25.00
ART 427	Advanced Watercolor	45.00
ART 431	Special Problems in Sculpture	40.00
ART 432	Neon Sculpture	45.00
ART 436	Architectural Sculpture	40.00

## Special Fees (continued)

ART 437	Film Animation	\$25.00
ART 438	Experimental Systems in Sculpture	40.00
ART 446	Computer Art II	35.00
ART 448	Computer Animation I	20.00
ART 451	Advanced Intaglio	40.00
ART 452	Advanced Lithography	40.00
ART 454	Advanced Screen Printing	35.00
ART 455	Advanced Photo Processes for Printmaking	30.00
ART 456	Fine Printing and Bookmaking I	30.00
ART 457	Fine Printing and Bookmaking II	30.00
ART 458	Papermaking	20.00
ART 459	Monoprinting	20.00
ART 460	Ceramic Clay	25.00
ART 463	Ceramic Glaze	25.00
ART 466	Special Problems in Ceramics	25.00
ART 472	Advanced Jewelry	15.00
ART 473	Advanced Metalworking	15.00
ART 474	Advanced Wood	25.00
ART 476	Fibers: Multiple Harness Weaving	25.00
ART 477	Printed Textiles	30.00
ART 494	ST Advanced Sculpture	20.00
ART 494	ST Carving	25.00
ART 494	ST Experimental Paper	25.00
ART 494	ST Experimental Printmaking	30.00
ART 494	ST: Fibers and Surface	25.00
ART 494	ST: Foundry Casting Methods	40.00
ART 494	ST: Print Textiles	25.00
ART 494	ST: Relief Printmaking	35.00
ART 494	ST: Turning	25.00
ART 494	ST: Vapor Glazes	15.00
ART 498	PS: Landscape Photography: Theory	25.00
ART 551	Intaglio Projects	40.00
ART 594	ST Turning	25.00
ART 598	ST Advanced Color Photography	35.00
ART 598	ST Advanced Screen Printing	35.00
ART 598	ST: Advanced Sculpture	20.00
ART 598	ST: Architectural Sculpture	40.00
ART 598	ST: Art Anatomy	20.00
ART 598	ST Ceramic Clay	25.00
ART 598	ST Ceramic Glaze	25.00
ART 598	ST Dimensional Animation	25.00
ART 598	ST Experimental Paper	25.00
ART 598	ST Experimental Printmaking	30.00
ART 598	ST Experimental Systems in Sculpture	40.00
ART 598	ST: Fibers and Surface	25.00
ART 598	ST Figure Painting	25.00
ART 598	ST Fine Printing and Bookmaking I	30.00
ART 598	ST Fine Printing and Bookmaking II	30.00
ART 598	ST: Foundry Casting Methods	40.00
ART 598	ST Jewelry Metalworking	15.00
ART 598	ST Life Drawing	20.00
ART 598	ST Lithography	40.00
ART 598	ST Monoprinting	20.00
ART 598	ST: Neon Sculpture	45.00
ART 598	ST: Nonsilver Photography	30.00
ART 598	ST: Papermaking	20.00
ART 598	ST: Photo Processes for Printmaking I	25.00
ART 598	ST: Portraiture Photography	25.00
ART 598	ST: Print Textiles	25.00
ART 598	ST: Printed Textiles	30.00
ART 598	ST: Relief Printmaking	35.00
ART 598	ST: Screen Printing	35.00
ART 598	ST Special Problems in Ceramics	25.00
ART 598	ST Special Problems in Sculpture	40.00
ART 598	ST View Camera	35.00
ART 598	ST Watercolor	45.00

Special Class Fees and Deposits for ASU Main and ASU East<sup>1</sup> (continued)

Special Fees (continued)

ART 598	ST. Wood	\$25.00
ART 621	Studio Problems: Ceramics	25.00
ART 621	Studio Problems: Jewelry Metalworking	15.00
ART 621	Studio Problems: Printmaking	25.00
BIO 182	General Biology	10.00
BIO 193	Nature of Biological Science	10.00
BIO 202	Human Anatomy & Physiology II	10.00
BIO 301	Field Natural History	25.00
BIO 321	Introduction to Ecology Lab	20.00
BIO 352	Lab in Vertebrate Development Anatomy	10.00
BIO 360	Basic Physiology	20.00
BIO 370	Vertebrate Zoology	25.00
BIO 385	Comparative Invertebrate Zoology	10.00
BIO 386	General Entomology	15.00
BIO 410	Techniques In Wildlife Conservation Biology	45.00
BIO 426	Limnology	20.00
BIO 453	Animal Histology	5.00
BIO 471	Ornithology	15.00
BIO 472	Mammalogy	15.00
BIO 473	Ichthyology	15.00
BIO 474	Herpetology	15.00
BIO 502	Transmissions on Electron Microscopy	20.00
BIO 505	Scanning Electron Microscopy	20.00
BLE 478	Student Teaching in the Elementary School	25.00
BLE 496	Field Experience	10.00
BUS 502	Managerial Communication	8.00
CHI 101	Elementary Chinese	25.00
CHI 102	Elementary Chinese	25.00
CHI 107	Chinese for International Professions I	25.00
CHM 101	Introductory Chemistry*	25.00
CHM 107	Chemistry and Society*	25.00
CHM 113	General Chemistry*	25.00
CHM 114	General Chemistry for Engineers*	25.00
CHM 115	General Chemistry with Qualitative Analysis*	25.00
CHM 116	General Chemistry*	25.00
CHM 117	General Chemistry for Majors I <sup>2</sup>	25.00
CHM 118	General Chemistry for Majors II	25.00
CHM 235	Elementary Organic Chemistry Laboratory <sup>2</sup>	25.00
CHM 319	Organic Chemistry Laboratory for Majors I <sup>2</sup>	25.00
CHM 320	Organic Chemistry Laboratory for Majors II	25.00
CHM 326	Analytical Chemistry Laboratory <sup>2</sup>	25.00
CHM 335	General Organic Chemistry Laboratory	25.00
CHM 336	General Organic Chemistry Laboratory*	25.00
CHM 343	Physical Chemistry Laboratory <sup>2</sup>	25.00
CHM 367	Elementary Biochemistry Lab	25.00
CHM 422	Instrumental Analysis Laboratory <sup>2</sup>	25.00
CHM 424	Separation Science*	25.00
CHM 431	Qualitative Organic Analysis <sup>2</sup>	25.00
CHM 444	General Physical Chemistry Laboratory*	25.00
CHM 452	Inorganic Chemistry Laboratory <sup>2</sup>	25.00
CHM 464	Biophysical Chemistry Laboratory*	25.00
CHM 467	General Biochemistry Laboratory	25.00
CHM 480	Methods of Teaching Chemistry	25.00
CHM 593	Applied Project Glass Blowing*	25.00
CLS 310	Principles of Clinical Chemistry I	25.00
CLS 320	Principles of Clinical Microbiology I	25.00
COM 484	Communication Internship	20.00
COM 584	Communication Internship	20.00
DCI 396	Field Experience I	10.00
DCI 397	Field Experience II	10.00
DSC 525	Design Methodologies	175.00

Special Fees (continued)

ECD 496	Field Experience	\$10.00
EDP 560	Individual Intellectual Assessment	12.50
EED 420	Science Methods, Management, and Assessment in the Elementary School	5.00
EED 478	Student Teaching in the Elementary School	25.00
EED 496	Field Experience	10.00
EED 578	Student Teaching in the Elementary School	25.00
EED 598	ST Using Math Manipulatives Elementary Schools	5.00
EED 598	ST Using Math Manipulatives/Middle Schools	5.00
EPD 700	Interdisciplinary Research Methods	175.00
EPD 710	Current Research in Design	175.00
EPD 712	Current Research in Planning	175.00
EPD 714	Current Research in History, Theory, and Criticism	175.00
EPE 105	Physical Education Activity Archery	15.00
EPE 105	Physical Education Activity Bowling	25.00
EPE 105	Physical Education Activity Fencing	45.00
EPE 105	Physical Education Activity Golf	45.00
EPE 105	Physical Education Activity Quest Boxing	30.00
EPE 105	Physical Education Activity Rock Climbing	35.00
EPE 110	Movement Analysis Laboratory (Golf)	45.00
EPE 110	Movement Analysis Laboratory (Fencing)	45.00
EPE 205	Physical Education Activity Archery	15.00
EPE 205	Physical Education Activity Bowling	25.00
EPE 205	Physical Education Activity Golf	45.00
EPE 305	Physical Education Activity (Golf)	45.00
EPE 335	Bio mechanics	15.00
EPE 340	Physiology of Exercise	15.00
EPE 345	Motor and Developmental Learning	15.00
EPE 370	Advanced First Aid	15.00
EPE 505	Applied Exercise Physiology Techniques	15.00
FON 142	Applied Food Principles	35.00
FON 341	Introduction to Planning Therapeutic Diets	15.00
FON 442	Experimental Foods	5.00
FON 445	Quantity Food Production	15.00
FON 446	Human Nutrition Assessment Lecture/Laboratory	25.00
FON 545	Recent Developments in Institutional Feeding	15.00
FON 546	Laboratory Techniques in Nutrition Research	25.00
FON 598	Research Methods in Nutrition	15.00
FRE 101	Elementary French	15.00
FRE 102	Elementary French	15.00
FRE 107	French for International Professions I	15.00
FRE 111	Fundamentals of French	15.00
FRE 201	Intermediate French I	15.00
FRE 202	Intermediate French II	15.00
FRE 207	French for International Professions II	15.00
GER 101	Elementary German	15.00
GER 102	Elementary German	15.00
GER 111	Fundamentals of German	15.00
GER 201	Intermediate German	15.00
GER 202	Intermediate German	15.00
GLG 102	Introduction to Geology II (Historical)	20.00
GLG 103	Introduction to Geology I Laboratory	5.00
GLG 294	Geology of the Planets	10.00
GLG 305	Geology of the Earth, Moon, and Planets	10.00
GLG 310	Structural Geology	5.00
GLG 335	Paleontology	15.00
GLG 336	Invertebrate Paleontology	10.00
GLG 405	Geology of the Moon	10.00

<sup>1</sup> For information on refunds, see "Special Class Fees and Deposits," page 49. For ASU West classes see the *ASU West Catalog*.

<sup>2</sup> Chemistry classes may also carry a nonrefundable special class fee

<sup>3</sup> Fees are variable and paid directly to contractor for rental of aircraft

Special Class Fees and Deposits for ASU Main and ASU East<sup>1</sup> (continued)

## Special Fees (continued)

GLG 406	Geology of Mars	\$ 300
GLG 421	Volcanology	3500
GLG 424	Petrology	500
GLG 435	Sedimentology	1500
GLG 436	Principles of Stratigraphy	200
GLG 441	Ore Deposits	200
GLG 455	Advanced Field Geology	3500
GLG 456	Cordilleran Regional Geology	1000
GLG 490	Clastic Sedimentology and Petrology	2000
GLG 490	Topics in Geology: Moor	1000
GLG 490	Topics in Geology: Pyroclastic Rocks	2000
GLG 490	Topics in Geology: Remote Sensing	1000
GLG 490	Topics in Geology: Volcano	2000
GLG 510	Advanced Structural Geology	3000
GLG 520	Advanced Physical Volcanology: Fall or v	3500
GLG 524	Advanced Igneous Petrology	2000
GLG 525	Advanced Metamorphic Petrology	2000
GLG 591	Volcanology	3500
GLG 598	ST: Advanced Field Geology	3500
GLG 598	ST: Clastic Sedimentology and Petrology	2000
GLG 598	ST: Cordilleran Regional Geology	1000
GLG 598	ST: Geology of Mars	1000
GLG 598	ST: Ore Deposits	2000
GLG 598	ST: Petrology/Petrography	5000
GLG 598	ST: Principles of Stratigraphy	2000
GLG 598	ST: Sedimentology	1500
GLG 598	ST: Volcanology	3500
GPH 1	Introduction to Physical Geography	800
GPH 211	Landform Processes	500
GPH 418	Landforms of the Western United States	2000
GPH 491	Geographic Field Methods	2000
GRA 386	Visual Communication III	17500
GRA 387	Visual Communication IV	17500
GRA 481	Visual Communication V	17500
GRA 482	Visual Communication VI	17500
HEB 101	Elementary Modern Hebrew	1500
HEB 102	Elementary Modern Hebrew	1500
HEB 201	Intermediate Modern Hebrew	1500
HEB 202	Intermediate Modern Hebrew	1500
HES 394	ST: Step Aerobics	2000
IDN 101	Elementary Indonesian I	1500
IDN 102	Elementary Indonesian II	1500
IDN 201	Intermediate Indonesian I	1500
IDN 202	Intermediate Indonesian II	1500
IEE 591	Seminar: Manufacturing Strategy	5000
IEE 591	Seminar: Effects of Economics New Products Market	5000
IEE 591	Seminar: Strategic Product Development	5000
IEE 591	Seminar: New Product Strategic	5000
IND 361	Industrial Design III	17500
IND 361	Industrial Design IV	17500
IND 461	Design Project I	17500
IND 461	Design Project II	17500
INT 364	Interior Design Studio I	17500
INT 365	Interior Design Studio II	17500
INT 464	Interior Design Studio III	17500
INT 465	Interior Design Studio IV	17500
INT 466	Interior Design Studio V	17500
INT 467	Interior Design Studio VI	17500
ITA 101	Elementary Italian	1500
ITA 102	Elementary Italian	1500
ITA 201	Intermediate Italian	1500
ITA 202	Intermediate Italian	1500
JPN 101	Elementary Japanese	1500
JPN 102	Elementary Japanese	1500
JPN 207	Japanese for International Professions I	5000

## Special Fees (continued)

JPN 201	Intermediate Japanese	15000
JPN 202	Intermediate Japanese	15000
JPN 207	Japanese for International Professions II	15000
JUS 454	Internship	2000
JUS 554	Internship	2000
MIC 206	Microbiology Laboratory	1000
MIC 301	Advanced Bacteriology Laboratory	2500
MIC 421	Experimental Immunology	2000
MIC 47	Bacterial Diversity and Systematics	2500
MUP 111	Studio Instruction	6000
MUP 121	Studio Instruction	4000
MUP 177	Studio Instruction	6000
MUP 311	Studio Instruction	6000
MUP 321	Studio Instruction	4000
MUP 327	Studio Instruction	6000
MUP 511	Studio Instruction	6000
MUP 521	Studio Instruction	4000
MUP 527	Studio Instruction	6000
MUP 7	Studio Instruction	6000
NOR 102	Elementary Norwegian	1500
NOR 201	Intermediate Norwegian	1500
NOR 202	Intermediate Norwegian	1500
NUR 304	Health Assessment for Registered Nurses	1500
NUR 33	Care of Acute and Chronically Ill Adults	1500
NUR 427	Community Health Nursing	1000
NUR 428	Management of Clients in Health Care Settings	3000
NUR 429	Community Health Nursing: Clinical	1500
NUR 433	Home Health Care	1500
NUR 559	Advanced Health Assessment	4500
NUR 580	Advanced Nurse Practicum I, II	4500
PLA 361	Landscape Architecture III	17500
PLA 362	Landscape Architecture IV	17500
PLA 461	Landscape Architecture V	17500
PLA 462	Landscape Architecture VI	17500
PLB 108	Concepts in Plant Biology	1000
PLB 201	Plants in Cities: Introduction to Urban Horticulture	2000
PLB 300	Comparative Plant Diversity	1500
PLB 308	Plant Physiology	3000
PLB 309	The Flora of Arizona	2000
PLB 340	Plant Cell Physiology	3000
PLB 362	Landscape Plants I	2500
PLB 363	Landscape Plants II	2500
PLB 370	Landscape Practicum	2500
PLB 404	Phytocology	2500
PLB 420	Plant Ecology: Organisms and Populations	2500
PLB 421	Plant Ecology: Communities and Ecosystems	2500
PLB 472	Greenhouse/Nursery Management	2500
POR 101	Elementary Portuguese	1500
POR 201	Intermediate Portuguese	1500
PUP 361	Urban Planning III	17500
PUP 362	Urban Planning IV	17500
PUP 46	Urban Planning V	17500
PUP 462	Urban Planning VI	17500
PUP 572	Planning Studio I: Data Inventory and Analysis	7500
PUP 574	Planning Studio II: Options and Implementation	17500
REC 463	Scrub Internship	2000
RUS 101	Elementary Russian	1500
RUS 102	Elementary Russian	1500
RUS 201	Intermediate Russian	5000
RUS 202	Intermediate Russian	1500
RUS 211	Basic Russian Conversation	1500
RUS 212	Basic Russian Conversation	1500
RUS 213	Basic Russian Conversation	5000
SLD 478	Student Teacher in Secondary Schools	2500
SLD 496	Field Experience	1000



Special Class Fees and Deposits for ASU Main and ASU East<sup>1</sup> (continued)

Special Fees (continued)

SED 578	Student Teaching in the Secondary Schools	\$25
SED 598	ST Using Math Manipulatives/Middle Schools	5.00
SPA 01	Elementary Spanish	15.00
SPA 102	Elementary Spanish	5.00
SPA 110	Spanish to International Professions I	5.00
SPA 111	Fundamentals of Spanish	15.00
SPA 201	Intermediate Spanish	5.00
SPA 202	Intermediate Spanish	15.00
SPA 207	Spanish for International Professions II	15.00
SPE 478	Student Teaching in Special Education	25.00
SPE 496	Field Experience	0.00
SPE 498	PS: Field Experience	10.00
SWE 111	Elementary Swedish	15.00
SWE 112	Elementary Swedish	15.00
SWE 211	Intermediate Swedish	15.00
SWE 212	Intermediate Swedish	15.00
THA 101	Elementary Thai I	15.00
THA 112	Elementary Thai II	15.00
THA 201	Intermediate Thai I	15.00
THA 212	Intermediate Thai II	15.00
THP 113	Techniques of Theatrical Makeup	5.00
THP 213	Introduction to Technical Theatre	4.00
THP 312	Puppetry with Children	1.00
THP 340	Scene Design	5.00
THP 345	Lighting Design	15.00
THP 440	Advanced Scene Design	5.00
THP 441	Scene Painting	20.00
THP 444	Drafting for the Stage	5.00
THP 445	Advanced Lighting Design	5.00
THP 506	Scenography	5.00
THP 512	Puppetry Workshop	10.00
UET 415	Electronic Manufacturing Engineering Principles	10.00
WST 294	Werner and Social Action	2.00

Deposits

ADE 321	Architectural Studio I	\$75
ADE 322	Architectural Studio II	25.00
ADE 421	Architectural Studio III	25.00
ADE 422	Architectural Studio IV	25.00
ADE 510	Foundation Architectural Studio	25.00
ADF 511	Core Architectural Studio I	5.00
ADE 512	Core Architectural Studio II	25.00
ADE 521	Advanced Architectural Studio I	25.00
ADE 522	Advanced Architectural Studio II	25.00
ADE 621	Advanced Architectural Studio III	25.00
ADF 622	Advanced Architectural Studio IV	25.00
CHM 111	Introductory Chemistry	10.00
CHM 117	Chemistry and Society	10.00
CHM 113	General Chemistry	10.00
CHM 114	General Chemistry for Engineers	10.00
CHM 115	General Chemistry with Qualitative Analysis	10.00
CHM 116	General Chemistry	10.00
CHM 111	General Chemistry for Majors	20.00
CHM 118	General Chemistry for Major II	20.00
CHM 235	Elementary Organic Chemistry Laboratory	20.00
CHM 311	Organic Chemistry Laboratory for Majors I	20.00
CHM 321	Organic Chemistry Laboratory for Majors II	20.00

Deposits (continued)

CHM 326	Analytical Chemistry Laboratory	\$20.00
CHM 335	General Organic Chemistry Laboratory <sup>2</sup>	20.00
CHM 336	General Organic Chemistry Laboratory <sup>2</sup>	20.00
CHM 337	General Organic Chemistry Laboratory <sup>2</sup>	20.00
CHM 343	Physical Chemistry Laboratory <sup>2</sup>	25.00
CHM 422	Instrumental Analysis Laboratory	25.00
CHM 424	Separation Science <sup>2</sup>	25.00
CHM 431	Qualitative Organic Analysis <sup>2</sup>	20.00
CHM 444	General Physical Chemistry Laboratory	25.00
CHM 452	Inorganic Chemistry Laboratory	20.00
CHM 463	Biophysical Chemistry Laboratory	20.00
CHM 525	Spectrochemical Methods of Analysis <sup>2</sup>	25.00
CHM 526	X-ray Methods of Analysis <sup>2</sup>	25.00
CHM 527	Electrochemical Methods of Chemical Analysis <sup>2</sup>	25.00
DSC 593	Applied Projects	25.00
DSC 599	Thesis	25.00
GRA 283	Letter Form I	25.00
GRA 284	Visual Communication I	25.00
GRA 286	Visual Communication II	25.00
GRA 287	Letter Form II	25.00
GRA 387	Graphic Representation	25.00
GRA 383	Typography	25.00
GRA 385	Typography II	25.00
GRA 386	Visual Communication III	25.00
GRA 387	Visual Communication IV	25.00
GRA 481	Visual Communication V	25.00
GRA 485	Visual Communication VI	25.00
GRA 485	Graphic Design Workshop	25.00
IND 36	Industrial Design III	25.00
IND 36	Industrial Design IV	25.00
IND 46	Design Project I	25.00
IND 46	Design Project II	25.00
INT 364	Interior Design Studio I	25.00
INT 365	Interior Design Studio II	25.00
INT 464	Interior Design Studio III	25.00
INT 465	Interior Design Studio IV	25.00
INT 466	Interior Design Studio V	25.00
INT 467	Interior Design Studio VI	25.00
PLA 36	Landscape Architecture III	25.00
PLA 362	Landscape Architecture IV	25.00
PLA 461	Landscape Architecture V	25.00
PLA 462	Landscape Architecture VI	25.00
PUP 36	Urban Planning II	25.00
PUP 36	Urban Planning IV	25.00
PLP 4	Urban Planning V	25.00
PLP 462	Urban Planning VI	25.00
PUP 572	Planning Studio I: Data Inventory and Analysis	25.00
PUP 574	Planning Studio II: Options and Implementation	25.00

Class Fees Paid in Class or at Location Listed

AET 3	Aircraft Design	\$0-40.00
AMT 1	Flight Safety I <sup>3</sup>	
AMT 2	Flight Safety II	
AMT 3	Flight Safety III <sup>3</sup>	
AMT 357	Multiengine Pilot Ground School	17.00/hour
AMT 4	Flight Safety IV	
EPE 35	Physical Education Activity (Scuba)	35.00
FPE 35	Physical Education Activity (Advanced Scuba)	35.00

For information regarding Special Class Fees and Deposits, page 49 of ASU West catalog, or the ASU West Catalog, Chemistry classes may carry a non-refundable special class fee. Fees may be included in the tuition contract for enrollment.

# Classification of Courses

## COURSE INFORMATION

Information about all lower and upper division courses offered at ASU Main and ASU East appears in the *General Catalog*, published every spring. Classes scheduled for the current or upcoming fall or spring semester are listed in the *Schedule of Classes*, published before the beginning of registration. Classes scheduled for the summer sessions are listed in the *Summer Sessions Bulletin*, published every spring. The *Schedule of Classes* and *Summer Sessions Bulletin* are also available online at [www.asu.edu/registrar/schedule](http://www.asu.edu/registrar/schedule). Information about all courses that apply toward graduate programs appears in the *Graduate Catalog*, published annually. Information about lower and upper division courses offered at ASU West appears in the *ASU West Catalog*, published annually.

## COURSE NUMBERING SYSTEM

**100–299 (Lower-Division) Courses.** Lower division courses are designed primarily for freshmen and sophomores. Certain classes are closed to freshmen who lack the designated prerequisites or whose majors are outside the unit offering the course. This information is available in the *General Catalog*, in the *Schedule of Classes*, or from the student's academic advisor.

**300–499 (Upper-Division) Courses.** Upper division courses are designed primarily for juniors, seniors, and other advanced students. Prerequisites and other restrictions should be noted before registration. Courses at the 400 level apply to graduate degree requirements for individual programs of graduate study when approved by the Graduate College. See "Reserving of Course Credit by Undergraduates," page 73.

**500–799 (Graduate-Level) Courses.** Graduate-level courses are designed for graduate students. However, an upper division undergraduate student may enroll in these courses with the approval of the student's advisor, the course instructor, the department chair, and the dean of the college in which the course is offered. If the course does not meet an undergraduate graduation requirement, it may be eligible for use in a future graduate program on the same basis as work taken by a nondegree graduate student. See "Reserving of Course Credit by Undergraduates," page 73.

**Continuing Registration.** Courses numbered 595, 695, and 795, Continuing Registration, carry one semester hour of credit; however, the student receives neither credit nor grade for the course.

**Omnibus Courses.** The omnibus numbers are used for courses offered on an experimental or tutorial basis or for courses in which the content is new or periodically changes. Academic units use their own prefixes before omnibus course numbers. The general nature of the work required for a particular omnibus course is consistent from unit to unit, but subject matter varies. Omnibus courses are often offered for a variable number of semester hours. See the appropriate academic unit in the *General Catalog* or major in the *Graduate Catalog* for the omnibus course listing under a subject area.

*uate Catalog* for the omnibus course listing under a subject area.

## OMNIBUS UNDERGRADUATE COURSE DESCRIPTIONS

### 191 First-Year Seminar. (1 3)

Small course emphasizing student faculty discussions on interaction. Strongly recommended for first year students. Must have taken 25 or fewer semester hours. Consult an academic advisor before enrolling. s recommended.

### 194, 294, 394, 494 Special Topics. (1–4)

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

### 484 Internship. (1 12)

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

### 498 Pro-Seminar. (1 7)

Small-group study and research for advanced students within the majors. Major status in the department or instructor approval required.

### 499 Individualized Instruction. (1 3)

Provides an opportunity for original study or investigation in the major or field of specialization on an individual and more autonomous basis. Neither a substitute for a catalog course nor a means of taking a catalog course on an individual basis. Requires application well in advance of regular registration with the student's advisor, the advisor's signature and approval by both the instructor with whom the student works and the chair of the department offering the course. This course may be taken only by outstanding senior students who have completed at least one semester in residence and who have a cumulative GPA of 3.00 or higher in the major or field of specialization. A special class fee may be required.

**First-Year Seminar.** The First Year Seminar series is specifically designed to meet the needs of the first year student. Faculty volunteer to direct the seminars and choose course topics according to their own interests and areas of specialization. Class size is restricted so that, early in their college careers, students may interact directly with some of the best faculty the university has to offer.

**Honors Courses.** The courses listed as 298 and 492 Honors Directed Study, 493 Honors Thesis, 497 Honors Colloquium, and all courses with the HON prefix are reserved for students in the University Honors College. These courses range in credit from one to six semester hours. Consulting with an honors advisor before enrolling is recommended.

## OMNIBUS GRADUATE COURSE DESCRIPTIONS

### 500, 600, 700 Research Methods. (1 12)

Course on research methods in a specific discipline.

### 580, 680, 780 Practicum. (1 12)

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

### 583, 683, 783 Field Work. (1 12)

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

### 584, 684, 784 Internship. (1 12)

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

### 590, 690, 790 Reading and Conference. (1 12)

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

**591, 691, 791 Seminar.** (1–12)

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

**592, 692 Research.** (1–12)

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

**593, 693, 793 Applied Project.** (1–12)

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

**594 Conference and Workshop.** (1–12)

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

**595, 695, 795 Continuing Registration.** (1)

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

**598 Special Topics.** (1–4)

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

**599 Thesis.** (1–12)

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

**792 Research.** (1–15)

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

**799 Dissertation.** (1–15)

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

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

**LAW 697.** This number has been reserved for the Visiting Student Program in the College of Law.

**Prerequisites and Corequisites.** Some requirements, known as prerequisites, must be met *before* registering for a course. Other requirements, called corequisites, must be met *while* taking a course. A student registering for a course should be able to show that prerequisites have been met and that corequisites will be met as stated in the catalog or *Schedule of Classes* or must otherwise satisfy the instructor that equivalent preparation has been completed.

**International Program Courses.** Courses with the prefix IPO numbered 495 and 595 are reserved for International Programs study abroad and exchange programs. For most programs, participating students register for 18 semester hours. Following completion of an international program, undergraduate students receive credit for the study completed, with a minimum of 12 semester hours and a maximum of 18 semester hours, graduates with a minimum of six semester hours and a maximum of 12 semester hours.

IPO courses numbered 495 and 595 are converted to ASU credit for recording courses taken abroad.

IPO courses numbered 494 and 598 may be taken for one semester hour. Students register for these courses under the title "Study Abroad." At the conclusion of the program and

the transfer of overseas courses to the students' ASU records, a grade of "Y" is entered for the course.

For some special international programs, students register and receive credit for fewer semester hours.

**Key to Course Listing Codes**

Code	Definition
M	ASU Main and ASU East campus code*
W	ASU West campus code*
GLG	Example of a departmental prefix designation
410	Example of a course number
(3)	Example of course semester hours
F	Course offered fall only
S	Course offered spring only
SS	Course offered summer session only
F, S	Course offered both semesters
F 1999	Course offered every other year on semester indicated
A	Course offered once a year
N	Course not regularly offered

\* Campus codes are not used in the catalogs but appear in the *Schedule of Classes* and the *Summer Sessions Bulletin*.



Galvin Playhouse

John MacIsaac photo

# Undergraduate Enrollment

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Arizona State University shares with other colleges and universities a tradition of service and academic excellence that is hundreds of years old. Its purpose is the exchange of knowledge and the pursuit of wisdom. What makes this university special is its commitment to providing a setting where faculty and students are challenged to exchange ideas and information within an atmosphere of intellectual honesty.

The university offers its students unique opportunities to enjoy both a rich cultural heritage and a diverse student population. Anyone giving evidence of suitable preparation, by way of acceptable academic credentials, is welcome to the university without regard to race, religious creed, or national origin.

Under the constitution and the laws of the State of Arizona, jurisdiction over ASU has been vested in the Arizona Board of Regents. The regents, in turn, grant broad legal authority to the president, the administration and the faculty to regulate student life within reasonable limits.

By enrolling, a student voluntarily assumes certain obligations of conduct and performance. These obligations include acting with honesty, integrity, and fairness in all campus and community activities. They also include avoiding certain behaviors, such as: the irresponsible use of alcohol; the use, possession, or distribution of illegal drugs, and verbal or physical assaults. Should a student advertently or inadvertently become involved in questionable campus-related actions or activities, the university will investigate the circumstances and will enforce its standards of conduct through prescribed procedures contained in the *Student Code of Conduct*.

Students are expected to become familiar with the *Student Code of Conduct*. Copies are available in the Office of Student Life. Both individuals and groups must adhere to these university standards of conduct. Violations of the *Student Code of Conduct* will subject the offenders to university disciplinary action.

The university further reserves the right to take necessary and appropriate action to protect the safety and welfare of the campus community and will cooperate with appropriate law enforcement agencies in their efforts to ensure a safe and secure environment.

## STUDENT SERVICES AT ASU

Arizona State University is a richly diverse academic setting with more than 49,000 students. The ASU student may be a traditional 18- to 24-year-old, a recent high school graduate, a community college transfer, someone returning to college to pursue a degree, or a professional studying for an advanced degree or career change. The ASU student may live in residence halls with sororities or fraternities on campus, or in one of the many communities in the metropolitan Phoenix area. Each of the 50 states and more than 100 countries have students enrolled at ASU.

The university is organized into several distinct administrative areas. Student Affairs, one of these areas, is responsible for the delivery of a variety of services and developmental programs in support of students' university

needs and educational pursuits. These programs and services are based upon human development research that advocates that a person develop culturally, emotionally, intellectually, morally, physically, psychologically, socially, and spiritually.

Special attention is given not only to the recruitment of a high-achieving, culturally diverse student body, but to the creation of an energetic campus environment that both catalyzes mature development and advances the academic endeavors of students.

Enrollment services to students begin with recruitment, admissions, student financial assistance, on-campus housing, and registration programs. Student Affairs encourages students to explore the facilities, services, and human resources available. ASU Main departments guiding students in their educational experience include Career Services, Counseling and Consultation, Educational Development, the Memorial Union, Recreational Sports, Residential Life, Student Development, Student Health, Student Life, and Student Media. Each of these areas provides specialized learning opportunities that contribute to an environment that fosters both personal and academic growth.

## Undergraduate Admission

Arizona State University welcomes application for admission from anyone seeking to benefit from the university's broad spectrum of educational programs and services.

For information and application materials, prospective students may call 480/965-7786 or write

UNDERGRADUATE ADMISSIONS  
ARIZONA STATE UNIVERSITY  
PO BOX 870112  
TEMPE AZ 85287-0112

With reasonable advance notice, Undergraduate Admissions arranges for a tour of ASU Main, a university information session, and, if desired, a meeting with an admissions counselor.

Requests for specific information relating to academic programs or student services should be addressed to the appropriate department/division, school, or college.

## Admission Procedures for New Freshman and Transfer Applicants

Individuals interested in admission to an undergraduate program at ASU need to have the following items on file at Undergraduate Admissions:

1. application for admission, including residency information;
2. official transcript(s) mailed directly from the institution(s);
3. American College Test (ACT), Scholastic Aptitude Test (SAT), or Test of English as a Foreign Language (TOEFL) scores, as needed; and

4. a \$40 nonrefundable application fee, required of all applicants applying as nonresidents or residing outside Arizona.

Applicants are urged to apply and to have their materials sent as soon as possible to enable university officials to make an early decision concerning the applicant's admission and to permit the student to take part in preregistration and orientation. After all necessary items are received, a minimum of four weeks should be allowed for an admission decision to be made.

**Early Notification Date.** Applicants whose files are complete (all necessary documentation has been received) by November 1 receive notification by December 1. Applicants whose files are complete by December 1 receive notification by January 15.

**Application.** Prospective students must complete and sign the Application for Undergraduate Admission. A \$40 nonrefundable application fee is required of all applicants applying as nonresidents or residing outside Arizona.

Students who do not enroll must submit a new application (and application fee for nonresident applicants) if they wish to apply for a subsequent semester. All documents are destroyed one year after the semester for which the student has applied if the student is not enrolled in a degree program.

Any misrepresentation or falsification on the admission application, including failure to report any college or university attendance, is cause for cancellation of enrollment and any credits earned.

**Residency Classification Information.** Like other state supported colleges and universities, ASU distinguishes between resident and nonresident students with regard to tuition. Residents of Arizona are required to provide residency information, which is part of the admission application. Any student who does not provide residency information is classified as a nonresident for tuition purposes. For more information call the Residency Classification Section at 480 965 7712.

**Transcripts.** Transcripts must be requested by the applicant. Official transcripts of academic records from high school and a separate transcript from each institution of higher education the student has attended must be *mailed direct to Undergraduate Admissions by the records office of the issuing institutions. Transcripts sent or carried by hand by the applicants themselves or transmitted by facsimile (fax machines are not accepted.* High school transcripts must show GPA, rank in class, and date of graduation. Applicants 22 years of age or older with 24 or more transfer credits and students who have completed an AGEC or associate's degree at the time of enrollment do not need to submit high school transcripts. An English translation of all foreign language transcripts is required.

**Entrance Examinations.** All new freshman applicants must take either the American College Test (ACT) or Scholastic Aptitude Test (SAT) or a national test date in their junior or senior year of high school. Transfer applicants who are 22 years of age or older with 24 hours of transfer credit or have completed an Arizona General Education Certificate (AGEC), an associate's degree, or a first semester freshman

compositional course with a minimum grade of "C" do not need to submit ACT or SAT scores.

A report of the test scores should be sent to Undergraduate Admissions directly from

AMERICAN COLLEGE TESTING PROGRAM  
PO BOX 168  
OWA CITY IA 52240

or the

COLLEGE BOARD ADMISSIONS TESTING PROGRAM  
BOX 592 R  
PRINCETON NJ 08540

Undergraduate Admissions may investigate any test score that is inconsistent with a student's academic record or previous scores.

An applicant whose native language is not English is usually required to take the Test of English as a Foreign Language (TOEFL). See "International Student Admissions," page 66.

**Certificate of Admission.** After being admitted, students receive a Letter of Admission, an Immunization Verification form, and publications that contain information about orientation programs.

Upon receipt, a student should check their admission information for accuracy and report any errors and changes to Undergraduate Admissions at 480 965 7788.

**Immunization Requirements.** Every newly admitted student born after December 31, 1956, must provide proof of measles/rubella immunity to Student Health. *Students are not permitted to register until proof of immunity to measles/rubella is on file with Student Health.*

Measles/rubella immunity proof can be faxed to Student Health at 480 965 8914. The following proof of measles/rubella immunity is considered adequate:

1. two vaccinations of MMR (measles, mumps, rubella), at least one of which must have been given after December 31, 1979,
2. a copy of laboratory test results that show immunity to both measles and rubella.

Verification that Student Health received a student's proof of measles/rubella immunity can be confirmed by going to [www.asu.edu/registrar](http://www.asu.edu/registrar) via the Web site two working days after the information has been faxed to Student Health. For more information on measles requirements, visit Student Health's Web site at [www.asu.edu/health](http://www.asu.edu/health).

### Orientation

University orientation programs for new students and their parents are provided at numerous times during the year, including the beginning of each semester. Each orientation program includes academic advisement, campus tours, special events, and an introduction to university resources and procedures. Parent programs are also included. Newly admitted students are sent information preceding each orientation program. Students are strongly encouraged to attend orientation activities.

### Undergraduate Admission Standards

The Arizona Board of Regents establishes undergraduate admission standards for the university in general. *Particular colleges, divisions, schools or departments within the uni-*

### Basic Competency Requirements

High School Courses	Test Scores	College Courses
<b>English</b>		
Four years high school: English composition/literature based	or Minimum test score: ACT English 21 or SAT I Verbal 530 (450) <sup>2</sup>	or One transferable three semester hour college level course in English composition
<b>Fine Arts</b>		
One unit of fine arts or a combination of two semesters of fine arts	or NA	or One transferable three semester hour fine arts course
<b>Foreign Language</b>		
Two years of the same foreign language	or NA	or One year of transferable college study in the same foreign language
<b>Laboratory Science</b>		
Three years high school, one each from three of the following biology chemistry earth science integrated sciences physics An advanced level course may be substituted for one subject area	or Two years high school lab science (biology, chemistry, earth science physics) plus Minimum SAT II subject test score on one of the following: <sup>2</sup> Biology Achievement 590 (550) Chemistry Achievement—600 (575) Physics Achievement—620 (590) ACT Science Reasoning 20 The test score may not be from any subject from which high school credit was earned	or Three transferable four semester hour college level lab science courses in different subject areas An advanced level course may be substituted for one subject area
<b>Mathematics</b>		
Four years high school: One year Algebra I One year Geometry I One year Algebra II One year advanced mathematics	or Minimum test score ACT Math 24 or SAT I Math 540 (500) <sup>2</sup>	or One transferable three semester hour course in mathematics for which Algebra II is a prerequisite
<b>Social Science</b>		
Complete both A and B		
A One year high school American history	or Minimum SAT II: subject test score on American History and Social Studies Achievement 560 (510) <sup>2</sup>	or One transferable three semester hour college level American history course
B One year high school social science e.g., anthropology, European history, geography, government, world history)	or Minimum SAT II: subject score on World History Achievement 580 (545) <sup>2</sup>	or One transferable three semester hour college level social science course

The ACT scoring system has been modified. As a result, these scores are effective for tests taken on and after October of 1989. Equivalent scores for tests taken before October 1989 are 19 for English and 18 for math.

<sup>2</sup> The SAT scoring system has been modified. As a result, these recentered scores are effective for tests taken on or after April 1, 1995. Equivalent scores for tests taken before April 1995 are in parentheses.

University may establish stricter standards, which are given in the respective sections of the catalog and should be noted by students planning to enroll in any of these programs.

#### Admission Requirements

**Graduation from Secondary School.** To be eligible for admission to ASU, an applicant must have graduated from a recognized high school with satisfactory scholarship defined as meeting both the general aptitude and basic competency requirements shown in the "General Aptitude Requirements for Freshmen" table, page 64, the "General Aptitude Requirements for College Transfers" table, page 65, and the "Basic Competency Requirements" table.

Applicants with a maximum of one deficiency in no more than two competency areas may be admitted with conditions subject to removing the deficiencies within one calendar year of university enrollment. See "Meeting Basic Competencies," page 78, for an explanation of procedures to meet these competencies.

Competencies may be met by combinations of high school and college courses or test scores. A minimum 2.00 average (4.00 A) must be earned in the courses taken in each of the six competency areas. Students 22 years of age or older with 24 or more transfer credits at the time of enrollment, students who have been awarded an associate's degree, and students who have earned an Arizona General

Education Certificate (AGEC) degree from a regionally accredited postsecondary institution at the time of application need only meet the general aptitude requirements. An applicant whose most recent education is outside the United States and whose school does not issue a traditional U.S. high school transcript may be exempt from fulfilling the competency requirements. See the "Basic Competency Requirements" table, page 62.

If the applicant is unable to meet these specific admission requirements, it is possible to file a letter of appeal with the University Undergraduate Admissions Board:

UNIVERSITY UNDERGRADUATE ADMISSIONS BOARD  
ARIZONA STATE UNIVERSITY  
PO BOX 870112  
TEMPE AZ 85287 0112

The decision of the board is final. The applicant must be able to meet at least one of the following criteria to be considered for appeal:

1. an upward grade trend during the high school career or an upward grade trend during the senior year;
2. positive recommendations from secondary school administrators, faculty, or counselors based on considerations such as academic potential, work experience, and leadership ability;
3. an average score of 50 or greater on the General Education Development (GED); or
4. completion of at least 12 semester hours of college freshman-level academic studies (at a community college or at a university or both) with a GPA of 2.50 or higher on a 4.00 = A scale in courses in English, social science, mathematics, physical or natural science, foreign languages, fine arts, or the humanities.

The School of Engineering recommends calculus. The laboratory sciences chosen should include at least one unit in physics and one year of chemistry. One year of biology is strongly recommended.

The College of Nursing requires one year each of high school physics and chemistry. Two years of high school chemistry are recommended.

**Admission Before Graduation from High School.** Admission may be granted to high school seniors who submit a six semester or seven semester transcript that shows academic quality and rank in class in keeping with admission standards and who complete the steps in the undergraduate admission procedures. Admission is official when a verification of the high school graduation showing the final GPA and the date of graduation has been received in the mail by Undergraduate Admissions directly from the high school. In addition, students who are admitted with more than two deficiencies must submit, at least 45 days in advance of the semester, official records to verify the completion of competencies such that *no more than* two deficiencies remain. An admission may be canceled if the final verification shows that the applicant has not met the university requirements for admission or that more than two deficiencies remain.

**Admission of Nondegree Applicants—Undergraduate.** Any high school graduate is invited to enroll for six or fewer semester hours per semester of undergraduate course work as a nondegree student. Students currently enrolled in high

school and persons under the age of 18 may be admitted as nondegree students by submitting official ACT or SAT scores that meet the general aptitude requirements of the university. Persons admitted as nondegree students for a specific year and term must remain nondegree until the next semester.

Anyone interested in admission as a nondegree undergraduate student at ASU must submit to Undergraduate Admissions: (1) a Nondegree Undergraduate Application for Admission (including residency information) and (2) a \$40 nonrefundable application fee (for applicants applying as nonresidents or residing outside Arizona). Applicants who are not high school graduates or who are younger than age 18 must also submit ACT or SAT scores.

No more than 15 hours of completed nondegree work may be applied to a degree program. A nondegree student who decides to work toward a bachelor's degree must *apply for admission to a degree program* with Undergraduate Admissions and meet the admission requirements.

Once registered in a regular degree program, a student is not permitted to register again in nondegree status. Nondegree students who have not completed an AGECE, associate's degree, or first semester composition course are not eligible to receive most types of financial aid, nor are they eligible to receive certain benefits, such as veteran benefits.

### Transfer Applicants

All transfer applicants under the age of 22 who have not completed an Arizona General Education Certificate (AGECE), associate's degree, or first year composition must submit official high school records, including an ACT or SAT score, and meet basic competency requirements. Students who will be 22 years old and have 24 transfer semester hours by the time the semester begins are exempt from the competency requirements.

**Arizona Applicants.** An Arizona applicant for transfer admission must have a cumulative GPA of 2.00 (4.00 = A) or higher in all work undertaken at previous institutions of higher learning. A minimum of 24 college or university transferable semester hours must have been earned to be considered a transfer applicant.

Arizona transfer applicants must have the respective minimum GPAs to be admitted to the professional programs in the following areas: Computer Science 2.50; Construction 2.25; Economics 2.50; Engineering 2.50, and Technology 2.25. Other academic units may have different GPA requirements to enroll in junior or senior level courses.

**Nonresident Applicants.** A non Arizona applicant for transfer admission must have a cumulative GPA of 2.50 or higher on a 4.00 = A scale in all work undertaken at previous institutions of higher learning. Applicants who have at least a 2.00 on a 4.00 = A scale and who believe that they have a strong academic record are considered on a case by case basis.

Regardless of residency, all applicants for the majors of Computer Science and Economics in the College of Liberal Arts and Sciences must have transfer GPAs of 2.50 or higher.

### Transfer Credit

Credit is awarded for traditional course work successfully completed at institutions of higher learning as indicated by

**General Aptitude Requirements for Freshmen**

Residency Classification	Class Rank	Composite Score		
		ACT <sup>1</sup>	SAT	GPA (4.00 = A)
Arizona residents <sup>3</sup>	top quarter	or 22	or 1040	3.0 competency GPA <sup>4</sup>
Nonresidents <sup>5</sup>	top quarter	or 24	or 1110	3.00 competency GPA

The ACT scoring system has been modified. As a result, these scores are effective for tests taken on and after October 1, 2018. Equivalent scores for tests taken before October 1, 2018 are listed for Arizona residents and 23 for nonresidents.

The SAT scoring system has been modified. As a result, these entered scores are effective for tests taken on and after April 1, 2015. Equivalent scores for tests taken before April 1, 2015 are listed for Arizona residents and 1000 for nonresidents.

<sup>3</sup> Resident freshmen who carry a competency GPA from 2.5 to 2.99 or who rank in the top 26-50 of the graduating high school class may be admitted with the conditions:

<sup>4</sup> A GPA calculated on courses that are listed in the competency requirements.

<sup>5</sup> All nonresident freshmen who bring with them a high school background and who rank in the top 26-50 of the graduating classes or who carry a competency GPA from 2.5 to 2.99 may apply and are considered on a case-by-case basis. Based on the review of the applicants may be admitted with conditions, deferred to additional course work's completion, or denied.

ASU and the Arizona Board of Regents. *Whether the specific credits can be applied toward a degree depends on the requirements of the department/division/school/college in which the student is enrolled.* There are several qualifications:

1. Transfer credit is not given for courses in which the lowest passing grade ("D") or a failing grade was received.
2. While some courses successfully completed but evaluated on nontraditional grading systems (e.g., pass/fail) may be acceptable for transfer, colleges in the university may not accept such credits to fulfill graduation requirements.
3. Grades and honor points earned at other colleges and universities are considered for admission but are not included in computing the student's cumulative GPA at ASU.

Certain types of credits cannot be transferred to ASU, including the following types:

1. credits awarded by postsecondary institutions in the United States that lack candidate status or accreditation by a regional accrediting association,
2. credits awarded by postsecondary institutions for "life experience"
3. credits awarded by postsecondary institutions for courses taken at noncollegiate institutions (e.g., governmental agencies, corporations, industrial firms)
4. credits awarded by postsecondary institutions for non-credit courses, workshops, and seminars offered by other postsecondary institutions as part of continuing education programs, and
5. credit for active service or courses that were taken through the military.

Acceptable academic credits earned at other institutions that are based on a different unit of credit than the one prescribed by the Arizona Board of Regents are subject to review before being transferred to ASU. Once a transfer course equivalency is determined, it stands unless the student changes majors and the course is required by the new major.

**Veterans Exception.** By Arizona statute, no failing grades received by a veteran at an Arizona university or community college before military service may be considered when determining admissibility. This exception applies only to veterans who

1. are honorably discharged,
2. have served in the armed forces of the United States for a minimum of two years, and
3. have previously enrolled at a university or community college in Arizona.

Military service records must be submitted, including form DD 214.

**Community Colleges.** A maximum of 64 semester hours are accepted as lower division credit when transferred from community, junior, or two-year colleges.

Community college students who plan to transfer to ASU at the end of their first or second years are strongly advised to follow the ASU transfer guides when taking courses to meet the requirements of the curricula they select. ASU transfer guides are available at [www.asu.edu/provost/articulation](http://www.asu.edu/provost/articulation).

**Students Attending Arizona Community Colleges.** To determine the equivalency of courses offered by Arizona community colleges and courses offered at ASU, a student should refer to the *Arizona Higher Education Course Equivalency Guide (CEG)* in consultation with an academic advisor. The CEG only addresses the acceptability of a course, not its applicability to any specific major, thus the need to consult with an advisor. Provided college attendance has been continuous, students are permitted to follow the degree requirements specified in the ASU catalog in effect at the time they began community college work. See "Guidelines for Determination of Catalog Year," page 51.

**Arizona General Education Curriculum (AGEC)**

With the statement of values as common ground, the Arizona public community colleges and universities have agreed upon a common structure for a general education core. This curriculum provides students attending any Arizona public community college with the opportunity to build a general education program which is transferable to any other state institution without loss of credit. This com



General Aptitude Requirements for College Transfers

Residency Classification	Transferable Semester Hours	GPA (4.00 - A)	Materials Required
Arizona residents	1 - 23	2.00 college GPA plus general aptitude requirements for freshman plus competency requirements	Application, college and high school transcripts, and ACT or SAT scores
	24 or more	2.00 college GPA plus competency requirements	Application, college and high school transcripts, and ACT or SAT scores
Nonresidents <sup>2</sup>	1 - 23	2.50 college GPA plus general aptitude requirements for freshman plus competency requirements	Application, college and high school transcripts, and ACT or SAT scores
	24 or more	2.50 college GPA plus competency requirements	Application, college and high school transcripts, and ACT or SAT scores

- <sup>1</sup> Students 22 years of age or older with 24 or more transfer credits and students who have completed an AGEC or associate's degree at the time of enrollment do not need to submit high school transcripts or test scores.
- <sup>2</sup> All nonresident transfers who have earned a cumulative GPA of 2.49 are encouraged to apply and are considered on a case-by-case basis. Based on the review, the applicants may be admitted with conditions, deferred until additional course work is completed, or denied.

Common agreement is called the Arizona General Education Curriculum (AGEC), which replaces the Transfer General Education Core Curriculum (TGECC) effective spring 1999.

The AGEC is composed of 35 semester hours of lower division general education course work in which a student may prepare for transfer.

The AGEC has three forms: AGEC A, AGEC B, and AGEC S. Refer to [www.abor.asu.edu/abor3/board/student/transfer/agec.htm](http://www.abor.asu.edu/abor3/board/student/transfer/agec.htm) for a detailed description of each AGEC.

Community colleges are responsible for certifying completion of the AGEC on the official institutional transcripts.

Completion of the appropriate AGEC will fulfill university lower division general education requirements of the baccalaureate degree with which AGEC articulates, but may not apply to degrees articulated with the Transfer Guide Pathway TG XR. Students completing the AGEC will still be required to fulfill lower division program requirements and prerequisites within their college and major/minor area of study. In order to most efficiently complete a degree program, students should select courses to meet the AGEC requirements that will also fulfill program requirements in the college and major they intend to pursue upon transfer.

Completion of any AGEC guarantees admission to the university provided that a GPA of 2.00 (for Arizona residents) or 2.50 (for non residents) has been achieved. AGEC completion, however, does not guarantee admission to any specific university program. Majors in the professional fields (i.e., architecture, engineering, business, fine creative arts, or health professions) and sciences have significant prerequisites and/or program requirements that must be completed before a student may be admitted to upper division course work. Community college students who are undecided about which of the universities they plan to attend or what program of study they intend to pursue are advised to explore educational options while they complete the AGEC. In all cases, students have the responsibility for selecting general education course work that is relevant to the requirements of their intended major and degree.

Students who complete both the AGEC and an associate's degree will be assigned junior class standing by the state universities. Junior class standing is based on the number of units a student has earned and does not necessarily indicate

the remaining number of units needed to complete degree requirements. Course prerequisites, major requirements, and upper division requirements will continue to be specified by each university. Appropriate sequencing of courses and timely completion of course prerequisites are essential to ensure efficient progress toward a baccalaureate degree. Students who have identified the university they plan to attend and/or a major area of study are advised to fulfill requirements and prerequisites identified by these programs through transfer guides and/or curriculum check sheets provided by the state universities. The AGEC does not replace articulation agreements developed to enhance the transfer process between specific institutions, i.e., Transfer Partnership Degrees. Nor does the AGEC eliminate the possibility that students who have identified the university they plan to attend and/or a major area of study will follow transfer guides provided by the state universities.

Upon completion of the AGEC, the community college will certify achievement of the block on the official institutional transcript.

The AGEC is reviewed and monitored each academic year by the subject area articulation task forces and the General Education Articulation Task Force (GEATF). The state wide GEATF is composed of representatives from each Arizona community college and state university. The GEATF is responsible for monitoring the AGEC and reviewing related appeals. The GEATF is responsible to the Academic Program Articulation Steering Committee (APASC).

**Admission Before Receipt of Final Transcript**

Students enrolled in other colleges and universities are considered for admission on the basis of meeting all admission requirements, except for a final transcript of work in progress. This final transcript must be sent to Undergraduate Admissions directly from the issuing institution immediately after the work in progress has been completed. Transcripts carried by hand are not accepted. *Admission is official only after the final transcript has been received showing that the applicant has met the university admission requirements.* In the event the applicant does not qualify or has falsified application documents, admission and registra-

tion are canceled, and any registration fees paid are returned.

**Appeal Procedure.** Transfer students who feel they have been unjustly denied credit for courses they have taken may appeal to the standards committee of the colleges in which they have enrolled. This procedure does not apply to community college transfer of credit greater than the 64-hour maximum. The decision of this committee is final.

An applicant for transfer admission whose academic record fails to meet ASU admission standards is denied admission. Such an applicant, however, may write a letter of appeal accompanied by three letters of recommendation to the University Undergraduate Admissions Board for reconsideration of his or her application:

UNIVERSITY UNDERGRADUATE ADMISSIONS BOARD  
ARIZONA STATE UNIVERSITY  
PO BOX 870112  
TEMPE AZ 85287-0112

The decision of this board is final.

### International Student Admissions

To comply with Immigration and Naturalization Services regulations, students who plan to attend ASU on an F-1 or J-1 visa must

1. have a minimum GPA of 3.00 (4.00 = A) from secondary school course work if a freshman applicant, or have a minimum GPA of 2.50 (4.00 = A) from college or university course work, if a transfer applicant,
2. meet basic competency requirements if attended four years of high school in the U.S.;
3. submit a financial statement not more than six months old from a financial institution assuring adequate resources to support themselves while in residence at the university;
4. have all required admissions materials and credentials reach Undergraduate Admissions by May 1 if applying for the fall semester or October 1 if applying for the spring semester (an English translation of all foreign language documents is required);
5. pay a nonrefundable application fee of \$40 in U.S. funds; and
6. meet all appropriate immigration standards and requirements.

**Credit from a Foreign Institution.** Transfer credits or advanced standing is granted for academic course work completed at foreign tertiary level institutions that are either recognized by the home government/Ministry of Education as a degree awarding institution or attached to a regionally accredited U.S. college or university as a Study Abroad Program. There will be no advanced credits for the international affiliation programs overseas unless they comply with this general policy.

**International Student TB Testing.** International students who come from countries with a high incidence of tuberculosis (TB) will be required to have a TB skin test. This test will be administered by Student Health when the international student arrives on campus. To see which countries have a high incidence of TB as defined by the Centers for Disease Control and Prevention (CDC) of the U.S. Public

Health Service, visit the Student Health Web site at [www.asu.edu/health](http://www.asu.edu/health)

**Nondegree International Applicants.** All students with F-1 and J-1 visas must maintain full-time status while studying in the United States. Undergraduate full-time status is defined as a minimum of 12 semester hours. However, students with F-1 and J-1 visas may be permitted to take a maximum of six semester hours at ASU as a nondegree student while maintaining full-time status at other higher education institutions or the American English and Culture Program (AECIP) at ASU. Approval by the responsible office at the other institution and/or AECIP is required to ensure the student maintains full-time status in compliance with applicable U.S. laws and regulations.

**TOEFL.** Applicants whose native language is not English (identified by the U.S. Department of State Bureau of Public Affairs) must provide evidence of English language proficiency as indicated by acceptable scores on the Test of English as a Foreign Language (TOEFL). A minimum TOEFL score of 500 (paper based) or 173 (computer based) is required for general admission to the university, and a minimum score of 550 (paper based) or 213 (computer based) is required for the professional programs in the School of Engineering and the Del E. Webb School of Construction. The following three exceptions apply:

1. Applicants who have completed their junior and senior years in a U.S. high school with a minimum 3.00 GPA may provide an SAT Verbal score of 580 or an ACT English subscore of 23 in place of a TOEFL score for the professional programs in the School of Engineering and the Del E. Webb School of Construction. Scores of 550 on the SAT Verbal or 23 on the English subscore place these applicants in the preprofessional programs. Applicants who have completed their junior and senior years at a U.S. high school with a GPA between 2.50 and 2.99 may provide a minimum TOEFL score of 550 (paper based) or 213 (computer based) or a minimum SAT score of 580 or a minimum ACT score of 23 to be admitted to the preprofessional programs.
2. Applicants who have completed a minimum of 48 semester hours of transfer credits at a U.S. college or university including completion of two semesters of first-year composition, earning a minimum 2.50 cumulative GPA, may be admitted into the preprofessional programs without the TOEFL. Entrance into the professional programs in the School of Engineering and the Del E. Webb School of Construction requires a TOEFL score of 550 (paper based) or 213 (computer based), an SAT verbal score of 580, or an ACT English subscore of 23.
3. Applicants who have received a bachelor's degree from a college or university in the United States are exempt from the TOEFL. If these applicants meet the admission standards for the professional programs, exclusive of language tests, they are admitted to the professional program.

Upon admission to the university, such students are issued a Certificate of Eligibility (Form I-20 or IAP 66), which enables them to apply for the appropriate visa.

All F-1 or J-1 visa students must have insurance coverage against illness and accident before being permitted to regis-

ter. Insurance must be maintained throughout the student's enrollment in the university and may be obtained at the time of registration.

Upon arrival on campus, students must report to the international student advisor in Student Life.

### American English and Culture Program

The American English and Culture Program (AEC) features an intensive course of study designed for adult international students who desire to become proficient in English as a second language for academic, professional, or personal reasons. Inquiries about the curriculum, fee schedule, and other topics should be addressed to

AMERICAN ENGLISH AND CULTURE PROGRAM,  
DEPARTMENT 4  
ARIZONA STATE UNIVERSITY  
PO BOX 873106  
TEMPE AZ 85287 3106

Acceptance into the American English and Culture Program is separate from admission to the university. For more information, see "American English and Culture Program," page 257.

### Applicants with Disabilities

Some classroom accommodations, such as, braille, audio tapes, interpreting services, enlarged print, and lab material conversions, require an extended preparation time (i.e., one semester). For this reason, applicants with disabilities are encouraged to contact Disability Resources for Students (DRS) upon application to the university to request information regarding disability documentation/eligibility requirements and deadlines that will ensure accommodations for the beginning of the semester. If students miss DRS deadlines, DRS will attempt to provide, but cannot guarantee, appropriate accommodations. Effective alternatives may be necessary. *Disability identification to DRS is confidential and cannot affect eligibility for admission.*

Call 480 965 1234 (VOICE) or 480 965 9000 (TTY). Access the Web site at [www.asu.edu/drs](http://www.asu.edu/drs), or write

DISABILITY RESOURCES FOR STUDENTS  
ARIZONA STATE UNIVERSITY  
PO BOX 873202  
TEMPE AZ 85287-3202

## Special Programs for Advanced Placement and Credit

A maximum of 60 hours of credit are awarded for any or all programs, including ASU comprehensive and proficiency examinations. In these categories, only credit earned by comprehensive examination counts toward the resident credit requirement for graduation.

**Advanced Placement.** Students who have taken an advanced placement (AP) course of the College Entrance Examination Board (CEEB) in their secondary school and who have taken an AP Examination of the CEEB may receive university credit. No credit is given for any examination with a score of 2 or 1. There is no limit to the number of AP credits that can be used to meet the General Studies requirement, including the requirements in natural sciences (S1 and S2), and literacy and critical inquiry (L1 and L2).

When the scores are received by the university directly from the CEEB, credit is awarded as shown in the "Advanced Placement Credit" table, page 65.

**College-Level Examination Program (CLEP).** Students who have taken a College Level Examination of the College Entrance Examination Board may receive university credit. The table of CLEP credit applies to all students enrolling in the university for the first time in August 1975 and any student enrolling thereafter. CLEP examination credit is *not* given where (1) it duplicates credit previously earned by the student at the university or accepted by the university for work done elsewhere or (2) it is more elementary than a course in which the student has already received credit. All examinations are given monthly by University Testing Services.

There is no limit to the number of CLEP credits that can be used to fulfill the General Studies requirement. The General Studies requirement in natural sciences (S1 and S2) and literacy and critical inquiry (L1 and L2) are not satisfied by CLEP (see the "General Studies Courses" table, page 89).

**General Examinations.** To obtain credit or placement, students must receive a standard score of 500 or higher for the General Examinations, except for English Composition with Essay, on which students must receive a standard score of 610 (1978 scale or 500 (1986 scale). *Students who have completed 60 semester hours of credit are not eligible to receive any credit for the CLEP General Examinations.*

**Subject Examinations.** A standard score of 50 or higher must be received to obtain credit for any subject examination. The completion of 60 semester hours does not preclude eligibility for additional credit for subject examinations.

*All equivalency is subject to future review and possible catalog change.* For more information, call University Testing Services at 480 965 7146 or stop by EDB 302.

**International Baccalaureate Diploma/Certificate.** Students who present an International Baccalaureate Diploma/Certificate may qualify for university credit, depending on the level of the examination and the grade received. Arizona State University grants credit for higher level courses only. A grade of 5 qualifies the student to receive credit for up to two introductory courses while a grade of 4 qualifies a student to receive credit for one introductory course. No credit is awarded for English as a Second Language (English B). Credit is awarded according to the table of "International Baccalaureate Diploma/Certificate Credit," page 70.

**Comprehensive Examinations.** A comprehensive examination is intended to permit a student to establish academic credit in a field in which the student has gained experience or competence equivalent to an established university course. Applications are given only for courses listed in the current catalog and only for courses in which a comprehensive examination can serve as a satisfactory measure of accomplishment.

A number of restrictions apply. The student must be enrolled at ASU with *no more than 100 semester hours of credit earned*. The examinations must be taken during the first two semesters in residence in a degree program at the university. *No more than 60 semester hours of credit may be established by comprehensive examinations (including AP and CLEP credit and independent learning courses*

## Advanced Placement Credit

Examination	Score	Semester Hours	Equivalency
Art History	5 or 4	6	ARS 101, 102
	3	3	ARS 101 or 102
Art Studio—Drawing	5	6	ART 111, 112
	4	3	ART 111
Art Studio—General	5	6	ART 112, DEC
	4	3	ART 112
Biology	5 or 4	8	BIO 181, 182
	3	4	BIO 181
Chemistry	5 or 4	9	CHM 113, 115
	3	4	CHM 113
Computer Science A	5 or 4	3	CSE 100
Computer Science AB	5 or 4	6	CSE 100, 200
Economics—Introductory Macroeconomics	5 or 4	3	ECN 111
Economics—Introductory Macroeconomics	5 or 4	3	ECN 112
English—Language and Composition	5 or 4	6	ENG 101, 114 eligible for ENG 102
English—Literature and Composition	5 or 4	6	ENG 101, 204 eligible for ENG 102
French—Language	5	14	FRE 201, 202, 311, 312
	4	11	FRE 201, 202, 311
	3	8	FRE 201, 202
French—Literature	5	18	FRE 111, 201, 202, 321, 322
	4	12	FRE 111, 201, 202
	3	8	FRE 201, 202
German—Language	5	14	GER 201, 202, 311, 312
	4	11	GER 201, 202, 311
	3	8	GER 201, 202
German—Literature	5	15	GER 111, 201, 202, 314
	4	12	GER 111, 201, 202
	3	8	GER 201, 202
History—American or European	5 or 4	6	HIS 103 and 104 or HIS 101 and 102
Latin—Language	5	16	LAT 101, 102, 201, 202
	4	12	LAT 101, 102, 201
	3	8	LAT 101, 102
Mathematics—Calculus AB	5, 4, or 3	4	MAT 270
Mathematics—Calculus BC	5 or 4	8	MAT 270, 271
	3	4	MAT 270
Music	5 or 4	3	MTC 125
Physics B	5 or 4	6	PHY 111, 112
	3	3	PHY 111
Physics C—Electricity and Magnetism	5 or 4	4	PHY 112, 114, or, upon departmental approval, credit may instead be granted for PHY 131, 132
Physics C—Mechanics	5 or 4	4	PHY 111, 113, or, upon departmental approval, credit may instead be granted for PHY 121, 122
Political Science			
	American Government and Politics	5 or 4	3
Comparative Government and Politics	5 or 4	3	POS 150
Psychology	5 or 4	3	PGS 101
Spanish—Language	5	14	SPA 201, 202, 311, 312
	4	11	SPA 201, 202, 311
	3	8	SPA 201, 202
Spanish—Literature	5	15	SPA 111, 201, 202, 325
	4	12	SPA 111, 201, 202
	3	8	SPA 201, 202
Statistics	5 or 4	3	STP 226

\* If the portfolio emphasizes 3D, the student can request to have it evaluated for ART 5 credit.

## CLEP Credit

Examinations	Semester	
	Hours	Equivalency
<b>General</b>		
English Composition	None	With essay qualifies for ENG 105
Humanities	6	Elective credit
Mathematics	3	MAT 106
Natural Sciences	8	Elective credit
Social Sciences and History	6	Elective credit
<b>Subject</b>		
American Government	3	POS 110
American History		
Early Colonization to 1877	3	HIS 103
1865 to the Present	3	HIS 104
American Literature	6	ENG 241, 242
Analysis and Interpretation of Literature	3	Elective credit
Calculus with Elementary Functions	4	MAT 270
College Algebra (1993) (replaces College Algebra [1979])	3	MAT 117 (Students must score 46 or higher to receive credit.)
College Algebra and Trigonometry	3	MAT 170
College French	8	FRE 101, 102
College German	8	GER 101, 102
College Spanish	8	SPA 101, 102
English Literature	3	Elective credit
Freshman College Composition (replaces College Composition and Freshman English)	None	With satisfactory essay qualifies for ENG 105.
General Biology	8	BIO 181, 182
General Chemistry	9	CHM 113, 115
Human Growth and Development	None	No credit
Information Systems and Computer Applications	3	Elective credit
Introduction to Educational Psychology	None	No credit
Introductory Accounting	6	Elective credit
Introductory Business Law	3	Elective credit
Introductory Psychology	3	PGS 101
Introductory Sociology	3	SOC 101
Principles of Macroeconomics (replaces Introductory Macroeconomics)	3	ECN 111 (Students must score 75 or higher to receive credit.) College of Business students may not use this for ECN 111 requirement.
Principles of Management	None	No credit
Principles of Marketing	None	No credit
Principles of Microeconomics (replaces Introductory Microeconomics)	3	ECN 112 (Students must score 75 or higher to receive credit.) College of Business students may not use this for ECN 112 requirement.
Trigonometry	None	No credit
Western Civilization (9)		
Ancient Near East to 1648	6	HIS 100, 101
1648 to the Present	3	HIS 102

Comprehensive examinations may not be taken in any course in which the student has been given admission credit or transfer credit from any educational institution. Credit may not be received for an examination in an elementary level of a field in which the student has earned more advanced credit nor for a prerequisite for a course already completed.

The decision on the suitability of course material for a comprehensive examination, the development of a comprehensive examination, and the administration of an examination are strictly departmental functions. An application is for one course only. The student completes an application form

with the number, title, and number of semester hours for the course. When completed, the application must be approved by the student's advisor and the chair of the department responsible for offering the course.

The student must then pay the stated fee for such examinations at Cashiering Services. The receipt must be taken to the departmental office.

The examination is prepared by the instructor who normally conducts the course, and it is comprehensive in nature and scope. The instructor and other experts designated by the chair grade the examination, using letter grades "A," "B," "C," "D," or "E." If the grade is "C" or higher, a mark

### International Baccalaureate Diploma/Certificate Credit

Examination	Score	Semester Hours	Equivalency
Art/Design	7, 6, or 5	6	ART 111, 112
	4	3	AR 112
Biology	7, 6, or 5	8	BIO 81, 182
	4	4	BIO 181
Chemistry	7, 6, or 5	9	CHM 113, 115
	4	4	CHM 113
Economics	7, 6, or 5	6	ECN 111, 117
	4	3	ECN 111
English A	7, 6, or 5	6	ENG 101, 110
	4	3	ENG 110
English B	No credit		None
Foreign Language A or B <sup>†</sup>	4	4	Foreign language 101
	5	5	Foreign language 101 107
History American	7, 6, or 5	6	HIS 103, 104
	4	3	HIS 103
History European	7, 6, or 5	6	HIS 101, 102
	4	3	HIS 101
Mathematics	7, 6, 5, or 4	4	MAT 270
Physics	7, 6, or 5	8	PHY 111, 112, 113, 114
	4	4	PHY 111, 113

\* No credit is awarded if the language is the student's native language

of "Y" is entered on the student's permanent record, otherwise, no entry is made. Credit by examination is indicated as such on the record. The student is notified by mail of the result of the examination. In cases of failure ("D" or "E"), the student is *not* given an opportunity to repeat the examination.

A student pursuing a second baccalaureate degree may not receive credit by comprehensive examination, but, with prior approval of the college, the student may use the examination to waive a course requirement if a grade of "C" or higher is earned.

**Proficiency Examinations.** Proficiency examinations and auditions are given

1. to waive a course requirement,
2. to validate certain transfer credits in professional programs, and
3. to determine a student's ability in a field where competence is an important consideration.

Detailed information may be obtained from the dean's office of the college in which the student is registered.

#### UNIVERSITY TESTING REQUIREMENTS

All new, transfer, or readmitted undergraduate students who plan to enroll for seven or more semester hours must meet one of the following testing requirements. *Students who fail to meet at least one of these requirements will not be allowed to register for any course the following semester.*

1. Take the ACT English or SAT verbal examination and have scores submitted to ASU.
2. Receive a score of 4 or 5 for the advanced placement examination in English offered by the College Entrance Examination Board and have scores submitted to ASU.

3. Take the CLEP general examination in English, earning a score that qualifies for placement in ENG 105, and have scores submitted to ASU.
4. Have previously taken ENG 101, 102, 105, 107, or 108 at ASU and received a grade of "D" or higher. If the course was taken before 1980, contact the Recording Section, SSV B114, before registering for classes.
5. Transfer a course equivalent to ENG 101, 102, 105, 107, or 108 with a grade of "C" or higher. An official transcript showing the grade must be received at ASU at least six weeks before registration. If a student transfers an equivalent composition course from a public community college or university in Arizona, the equivalency is automatically posted, and the student need not take further action. A student transferring a composition course from any other college or university must have the course evaluated for equivalency. See "First Year Composition Requirement," page 81, for more information.

#### Placement Examinations

**English.** New students and continuing, re-entry, transfer, and nondegree students who have not taken any composition courses are placed in First Year Composition courses according to their scores on the ACT English or SAT Verbal tests.

*Note.* The ACT and SAT scoring systems have been modified. Shown in parentheses are equivalent ACT scores for tests taken before October 1989 and equivalent SAT scores for tests taken before April 1995.

Students who score 18-16) or below on the ACT English test or 460 (380 or below on the SAT Verbal test must enroll in WAC 101 (a basic writing course (see "Writing Across the Curriculum," page 359). Students who score

between 19 (17 and 23–24 on the ACT English test or between 470–390) and 650–580 on the SAT Verbal test are eligible to enroll in ENG 101. Students who score 29 (25) or higher on the ACT English test or 660–590) or higher on the SAT Verbal test may take ENG 105 in place of ENG 101 and 102. Students who are accepted in the University Honors College are eligible to enroll in ENG 105 after being advised. Students may also qualify for ENG 105 by achieving appropriate scores on the CLEP General Examination in English Composition with Essay or the CLEP Subject Examination in College Composition with Essay. For more information, contact University Testing Services (UTS), EDB 302, call UTS at 480 965 7146, or access the Web site at [www.asu.edu/uts](http://www.asu.edu/uts).

**Foreign Language.** For information regarding foreign language placement testing see “Foreign Language Requirement,” and “Foreign Language Placement,” page 384, and “Special Programs for Advanced Placement and Credit,” page 67.

**Mathematics.** Placement examinations before registering in mathematics courses are not required at ASU. Students planning to register in mathematics courses should consult the Self Advising flowchart available at university advising offices and the Department of Mathematics offices in PSA 208 and 216. The flowchart places emphasis on a student’s prior preparation and performance in mathematics. In most lower division mathematics courses, an intensive review by the students is followed by a test during the first week of classes. Students not doing well on these tests are encouraged to enroll immediately in a less demanding mathematics course. Students needing additional evaluation are encouraged to take the Algebra Placement Exam or the Calculus Placement Exam administered by appointment at the Mathematics Testing Center, PSA 21. Call the Department of Mathematics Undergraduate Office at 480 965 7195 for an appointment.

## Academic Advising

Effective academic advising of students is an essential aspect of the educational experience at ASU. The university is committed to providing quality advising to continuing, first-time, and transfer students. To achieve the highest quality advising, students, faculty, and staff must work to form a partnership. To ensure timely and accurate advising to their majors, each college has advisors to assist students in developing programs of study, assessing educational goals, and understanding rules, procedures, and curriculum requirements. In some colleges, these advisors are faculty members. In others, they are full-time, professional advisors. In most instances, students have academic and career advising available from both faculty members and full-time advisors. Students are encouraged to take advantage of the skill and knowledge of the advising professionals available to them. Most new students and many continuing students have mandatory advising as a condition of registration. An additional unit, Cross-college Advising Services ([CAS] UASB 129, 480 965 4464), is a central advising, referral, and information facility whose staff is available to assist students in their academic careers at ASU. Emphasis is placed on advising services to first-time, prospective, transfer, and visiting students and students in transition, such as those changing

majors and those without majors. Bachelor of Interdisciplinary Studies majors (B.I.S. or pre-B.I.S.) receive academic advising in CAS. In addition to guidance in the exploration or selection of a major, CAS provides general academic information and referrals to all areas of student academic support.

Students are strongly encouraged to seek academic advising at the earliest possible time and regularly throughout their academic careers, whether or not advising is mandatory in their particular programs. Advisors may be contacted at the locations and times shown in the “Academic Advising” table, page 72. See “Building Abbreviations,” page 594, for a list of building abbreviations and names.

## Readmission to the University

Undergraduate students who have previously attended ASU but have not been enrolled at ASU for one semester or more are required to apply for readmission for the semester in which re-enrollment is intended. Nonresident applicants must submit a nonrefundable \$40 application fee. If, meanwhile, the student has attended another accredited college or university, it is necessary for the student to have on file an official transcript of all academic work taken. Failure to report such attendance is considered misrepresentation and falsification of university records. In addition, it is considered cause for Records Hold action and withholding of further registration privileges. An applicant for readmission must meet the requirements for good standing. See “Retention and Academic Standards,” page 77, and the requirements of the college to which the application is being made. An applicant who has been denied readmission may appeal to the University Undergraduate Admissions Board. Nondegree applicants for readmission must have a minimum GPA of 2.00. If not, the applicant must apply to ASU through Undergraduate Admissions.

**Conditional Readmission.** A student completing academic work in progress at another institution may be granted conditional readmission. This conditional status remains effective until an official transcript is received. The student is subject to Records Hold action, and additional registration privileges are withheld if this condition for readmission is not cleared by midsemester.

## Academic Renewal

Academic renewal is a university policy administered for the purpose of recalculating the ASU cumulative GPA of undergraduate students who have been readmitted to a degree program after an absence of at least five continuous calendar years including summer sessions and who have completed in good standing a minimum of 12 college-approved additional hours in residence within three semesters after re-entry. Students may have the former academic record before the five-year absence (including transfer credits) accepted in the same manner as if the credits were transfer credits. That is, earned hours are carried forward for up to 60 hours of credit in which a grade of “C” or higher was earned. The cumulative GPA is based only on credits earned subsequent to the student’s re-entry. All graduation residency, academic recognition residency, and GPA requirements must be fulfilled after academic renewal.

Academic Advising<sup>1</sup>

College	Location	Telephone	Days	Hours <sup>3</sup>	Web Address
College of Architecture and Environmental Design	ARCH 141	965 3584	Mon. Fri.	8:30 A.M. noon, 1–4 P.M.	
College of Business	BA 123	965 4227	Wed. Other weekdays	9 A.M.–6:30 P.M. 9 A.M.–4:30 P.M.	www.cob.asu.edu/up indexupo.html
College of Education	EDB 7	965 3877	Mon. Fri.	8:30 A.M. 5 P.M.	www.asu.edu/educ/osa
College of Engineering and Applied Sciences	EC G100	965 3421	Mon. Fri.	8:30 A.M. noon, 1 5 P.M. <sup>4</sup>	www.eas.asu.edu
College of Fine Arts	GHALL 127	965 4495	Mon. Fri.	8:00 A.M. noon, 1 5 P.M.	www.asu.edu/cfa
College of Law	LAW 101	965-1474	Mon. Fri.	8:30 A.M. 5 P.M. <sup>5</sup>	
College of Liberal Arts and Sciences	SS 111	965 6506	Mon. Fri.	8:30 A.M. 5 P.M.	
College of Nursing	NUR 108	965 2987	Mon. Fri.	8:30 A.M. 5 P.M.	
College of Public Programs	WILSN 203	965 1034	Mon. Fri.	8:30 A.M. 5 P.M.	www.asu.edu/copp/ coppadv.html
Cross college Advising Services	UASB 129	965-4464	Mon., Wed., Tues., Thurs., Fri.	9 A.M.–6:30 P.M. 9 A.M. 5 P.M.	
Graduate College	WILSN lobby	965 3521	Mon. Fri.	8:30 A.M. 5 P.M. <sup>4</sup>	
University Honors College	MCL 112	965 2359	Mon. Fri.	8 A.M. 5 P.M. <sup>4</sup>	www.asu.edu/honors

<sup>1</sup> For academic advising at ASU East, see the "Academic Advising" table, page 540

<sup>2</sup> Effective Sept. 1, 1999, the area code is 480 for all numbers at ASU Main, ASU East, and Downtown Center but remains 602 for ASU West

<sup>3</sup> Arizona is on mountain standard time all year and does not observe daylight saving time

<sup>4</sup> Walk-ins are welcome; appointments are recommended

<sup>5</sup> Call for additional hours

A request for academic renewal follows this procedure:

1. Students interested in academic renewal must request the Application for Academic Renewal from the Readmission Section of the Office of the Registrar or the dean of the college offering the major.
2. The Application for Academic Renewal may be submitted immediately upon readmission but not later than the start of the third semester after readmission.
3. The Application for Academic Renewal is submitted by the student to the dean of the college offering the major.
4. The dean specifies in advance a minimum of 12 semester hours.
5. When the approved credits are completed with a cumulative GPA of 2.50 or higher, and no grade lower than "C" in each course, the dean forwards the Application for Academic Renewal to the Office of the Registrar for processing.

Only students working toward their first undergraduate degree are eligible to apply for academic renewal, which may be effected only once during a student's academic career. Academic renewal is transferable among colleges. All students with ASU GPAs below 2.00 are eligible to petition for academic renewal. Individual colleges may elect to entertain petitions for academic renewal from students with ASU GPAs above 2.00. College standards committees have final authorization on academic renewal petitions. Eligibility for graduation is based on the ASU cumulative GPA after academic renewal. However, a student's complete record before and after academic renewal remains on the transcript and may be taken into consideration when a student

applies for undergraduate professional or graduate programs.

## Registration

All persons attending a class at ASU must be registered for that class. A student is considered to be registered when all registration fees have been paid in full.

**Eligibility.** Only eligible students may register for courses at ASU. An eligible student is either continuing from the previous semester or has been admitted or readmitted to the university. See "Undergraduate Admission," page 60, and "Readmission to the University," page 71.

**Proof of Identification.** To receive university services, photo identification must be presented. Each admitted or readmitted student who completes the registration process for a regular semester needs to obtain a student identification card. This photo identification card is valid for the duration of the student's enrollment at ASU.

Photo IDs are issued throughout the semester at the Sun Card office located in the Memorial Union on Main Campus, and at the OASIS in the Center Building on East Campus. See the *Schedule of Classes* or refer to "Sun Card/ID Card," page 48.

**Registration Fees.** Registration fees are due and must be paid in full at the time specified each semester in the *Schedule of Classes*. If any payment tendered is unauthorized, incomplete, or received after the due date, registration fees are considered not paid.

**Schedule of Classes.** The *Schedule of Classes*, published for the fall and spring semesters, and the *Summer Sessions Bul*



letim are distributed without charge. These publications are also available online at [www.asu.edu/registrar/schedule](http://www.asu.edu/registrar/schedule). They list course offerings, dates, times, places, and procedures for registration, along with other important information relating to the term.

**Course Loads.** A minimum full-time course load for an undergraduate student is 12 semester hours. The maximum course load for which a student may register is 18 semester hours (with the exception of a 19-hour maximum for students enrolled in the Colleges of Engineering and Applied Sciences or Architecture and Environmental Design). A student wishing to register for more than the maximum must petition the standards committee of the college in which the student is enrolled and must obtain an approved override before registration. See "Summer Session Semester Hour Load," page 73, for summer course load information.

**Reserving of Course Credit by Undergraduates.** Seniors at ASU within 12 semester hours of graduation may enroll in a 400-level or graduate course and reserve the credit for possible use in a future graduate program. The course can not be used to meet a baccalaureate graduation requirement. Before registration in the course, the student must submit a Graduate College Petition form requesting credit reservation. The form must be signed by the student's advisor, the head of the academic unit offering the class, and the dean of the Graduate College.

Permission to reserve a course does not guarantee admission to a graduate degree program or that the course may be used toward graduate degree requirements. A maximum of nine semester hours may be reserved, and only courses with an "A" or "B" grade are applicable. Reserved credit earned before admission to a graduate degree program is classified as nondegree credit. The maximum course load for a student enrolled in a reserved course is 15 semester hours during a regular semester and six hours during a summer session.

**Summer Session Semester Hour Load.** The summer session semester hour load limit is seven semester hours for each five-week session and nine semester hours for the eight-week session. The student may not exceed a total of 14 semester hours for any combination of sessions.

**Concurrent Enrollment.** Provided that the other university regulations concerning enrollment, graduation requirements, and transfer of credits are not violated, a student may enroll in classes at other institutions or in independent learning courses while enrolled at ASU. However, the student is urged to seek advisement before concurrent enrollment to assure orderly progress toward a degree. If total credits exceed the maximum course load, prior permission must be granted by the college standards committee. See "Course Loads," page 73.

**Attendance.** The instructor has full authority to decide whether class attendance is required.

**Enrollment Verification Guidelines.** The registrar is responsible for verifying enrollment according to the general guidelines in the "Enrollment Verification Guidelines" table. Independent learning courses are not considered for enrollment verification purposes.

## Cooperative Programs

**Cooperative Education.** Cooperative education at ASU is any educational program that requires *alternating classroom and work experience* in government or industry. The work experience exists for its educational value.

**Full-time Status of Co-op Students.** A co-op student, during a work semester, is identified as both co-op and full-time by the university. In order to qualify, the student must have prescribed hours and GPA requirements.

**Rights and Privileges of Co-op Students.** During their work semesters, co-op students have the rights, privileges, and protections with regard to university matters accorded to full-time students, except financial aid. They maintain catalog continuity and have student access to university facilities and events.

**Financial Aid for Co-op Students.** Co-op students are not identified to lenders, including ASU, as being in loan repayment status. They have an "in-school" full-time enrollment status. Co-op students do not receive any financial aid disbursement during their co-op semesters, *nor are such awards transferred to another semester*. The student is responsible for notifying Student Financial Assistance as soon as plans for a co-op term are made but no later than 10 days before the co-op term begins. The department or school is responsible for notifying Student Financial Assistance of students approved for co-op terms.

**Traveling Scholar Program.** The Traveling Scholar Program is a cooperative program between the state universities designed to enable students to take advantage of programs or special resources that are not available at their own institutions. Any undergraduate student with a GPA of at least 2.50 or graduate student with a GPA of at least 3.00 enrolled at ASU, Northern Arizona University, or University of Arizona may be designated a Traveling Scholar by prior mutual agreement of the appropriate academic authorities at both the sponsoring and hosting institutions. Contact the Registrar's Records Information Section for more information and the application form.

## Grading System

### DEFINITIONS

#### Unit of Credit

The Arizona Board of Regents has defined (May 26, 1979) a unit of credit for the institutions under its jurisdiction. A minimum of 45 hours of work by each student is required for each unit of credit. An hour of work represents a minimum of 50 minutes of class time—often called a "contact hour"—or 60 minutes of independent study work. For lecture/discussion courses, this requirement equates to at least 15 contact hours and a minimum of 30 hours of work outside the classroom for each unit of credit. Even though the values of 15 and 30 may vary for different modes of instruction, the minimum total of 45 hours of work for each unit of credit is a constant. Since the unit of credit as defined by the Arizona Board of Regents is the cornerstone of academic degree programs at ASU, degrees granted by other institutions that are recognized by ASU should be based on a similar unit of credit.

### Enrollment Verification Guidelines

	Full Time	Half Time	Less Than Half Time
<b>Regular semester</b>			
Undergraduate	12 or more hours	6-11 hours	5 or fewer hours
Graduate	9 or more hours	5-8 hours	4 or fewer hours
Graduate assistant*	6 or more hours		
<b>Five-week summer session</b>			
Undergraduate	4 or more hours	2 hours	1 hour
Graduate	3 or more hours	2 hours	1 hour
Graduate assistant	2 or more hours	1 hour	
<b>Eight-week summer session</b>			
Undergraduate	6 or more hours	3-5 hours	2 or fewer hours
Graduate	5 or more hours	3-4 hours	2 or fewer hours

\* For enrollment verification purposes, "graduate assistant" is a generic term that includes graduate assistants, teaching assistants, research assistants, graduate associates, teaching associates, and research associates.

### Grades and Marks

All grades and marks appear on the permanent record and/or unofficial transcript.

They are indicated by the letters shown in the "Grades" table.

Grades		
Grade	Definition	Value
A	Excellent	4.00
B	Good	3.00
C	Average	2.00
D	Passing	1.00
E	Failure	0.00
I	Incomplete	
NR	No report	
P	Pass	
RC*	Remedial credit	
RN*	Remedial no credit	
W	Withdrawal	
X	Audit	
Y	Satisfactory	

\* This grade appears on only unofficial copies of AST transcripts.

### Grading Options

Ordinarily a grade of "A," "B," "C," "D," or "E" is given upon completion of a course, unless a grading option of "audit" or "pass/fail" is indicated at the time of registration. *Grading options cannot be changed after the close of the drop/add period.*

### Incomplete

A mark of "I" (incomplete) is given by the instructor only when a student who is otherwise doing acceptable work is unable to complete a course because of illness or other conditions beyond the student's control. The mark of "I" should be granted only when the student can complete the unfinished work with the same instructor. However, an incomplete ("I") may be completed with an instructor designated by the department chair if the original instructor later becomes incapacitated or is otherwise not on campus. The student is required to arrange with the instructor for the completion of the course requirements. The arrangement is

recorded on the Request for Grade of Incomplete form. The student has one calendar year from the date the mark of "I" is recorded to complete the course. If the student completes the course within the calendar year, the instructor must submit a Request for Grade of Incomplete Authorization for Change of Grade form to the Office of the Registrar, whether the student passed or failed the course. Marks of "I" are changed to a grade of "E" for purposes of evaluating graduation requirements for undergraduate students. Marks of "I" received in the fall 1983 semester or thereafter for undergraduate courses that have been on a student's record for more than one calendar year are automatically changed to a grade of "E." An undergraduate student does not reregister or pay fees for a course for which an incomplete "I" has been received in order to complete the course.

Students who receive a mark of "I" in courses at the 500 level or above have one calendar year to complete the course for a grade. After one calendar year, the mark of "I" becomes a permanent part of the transcript. To repeat the course for credit, a student must reregister and pay fees. The grade for the repeated course appears on the transcript but does not replace the permanent "I."

### Satisfactory

A mark of "Y" (satisfactory) may be used at the option of individual colleges and schools within the university and is appropriate for internships, projects, readings and conferences, research, seminars, theses, and workshops. The "Y" is included in earned hours but is not computed in the GPA.

### Credit Enrollment

The semester hour is the unit on which credit is computed. It represents one 50-minute class exercise per week per semester. To obtain credit, a student must be properly registered and must pay fees for the course.

### Audit Enrollment

A student may choose to audit a course, in which case the student attends regularly scheduled class sessions, but no credit is earned. The student should obtain the instructor's approval before registering and paying the fees for the course. Selected courses may not be audited. Veteran students using education benefits should see "Veterans Services," page 40.

The mark of "X" is recorded for completion of an audited course, unless the instructor determines that the student's participation or attendance has been inadequate, in which case the mark of "W" (unrestricted withdrawal) may be recorded. This grading option may not be changed after the close of drop/add. The "X" is not included in earned hours and is not computed in the GPA.

### Pass/Fail Enrollment

A mark of "P" (pass) or "E" (fail) may be assigned for this grading option. This grading method may be used at the option of individual colleges and schools within the university. Consult the college dean's office for detailed information and restrictions before registration. "P" is included in earned hours but is not computed in the GPA.

### Remedial Enrollment

A mark of "RC" (remedial credit) or "RN" (remedial no credit) may be assigned for this grading option. The course appears on an unofficial ASU transcript but does not appear on the grade report or official ASU transcript and is not included in earned hours. Remedial hours are included in verification of enrollment for purposes of loan deferment and eligibility.

## WITHDRAWALS

### Instructor-Initiated Drop

An instructor may drop a student for nonattendance during the second week of classes in fall or spring semesters or the first four days of each summer session. Instructor-initiated drops for nonattendance are signed by the dean or dean's designee. The college notifies students by mail. The student must contact the instructor before the end of the first week of classes if absences during that period cannot be avoided.

### Drop/Add

Students registering for courses for a semester or summer session may drop or add courses through the first week of classes in a semester or the first two days of a summer session. See the *Schedule of Classes* or *Summer Sessions Bulletin* for dates of drop/add periods. During this period, a student may drop one or more but not all scheduled courses without penalty. Courses that are dropped do not appear on the student's transcript and fees paid are fully refunded, depending on the student's remaining hours. A student who wishes to withdraw from all courses during the drop/add period must process an unrestricted withdrawal.

### Unrestricted Course Withdrawal

During the first four weeks of a semester or the first six days of a summer session, a student may withdraw from any course with a mark of "W." See the *Schedule of Classes* or the *Summer Sessions Bulletin* for dates of the unrestricted withdrawal period.

### Restricted Withdrawal

From the fifth week to the end of the 10th week of a semester and from the seventh day to the end of the third week of a summer session, students may withdraw with a mark of "W" from only courses in which the instructor certifies that they are passing at the time of the withdrawal. See the *Schedule of Classes* or the *Summer Sessions Bulletin* for dates of the restricted withdrawal period.

The number of restricted withdrawals with the mark of "W" is limited. One restricted withdrawal is assessed for each course withdrawn from, unless the student is withdrawing from all courses. A complete withdrawal results in the assessment of one restricted withdrawal against a student's limit. The number of withdrawals is a total of two for students during freshman, sophomore, junior, or senior standing; and a total of two for students during second undergraduate degree standing.

Students who have reached their restricted withdrawal limit are not allowed to process any additional restricted course withdrawals. However, students are allowed to process a restricted complete withdrawal even when they have reached the restricted withdrawal limit. The preceding limits do not prevent students from processing a complete withdrawal from the university with marks of "W" or "E." Complete withdrawal counts as one withdrawal for purposes of applying the above limits. The preceding does not apply to audit enrollment or zero hour labs and recitations.

**Procedure for Restricted Withdrawal.** A student seeking a restricted withdrawal needs to

1. obtain a withdrawal form from any registrar site;
2. obtain a signature and verification of grade from instructor(s), and
3. have the form processed at any registrar site.

### Instructor-Initiated Withdrawal

An instructor may withdraw a student from a course with a mark of "W" or a grade of "E" only in cases of disruptive classroom behavior. A student may appeal an instructor-initiated withdrawal to the standards committee of the college in which the course is offered. The decision of the committee is final. Restricted withdrawal limits do not apply to withdrawals initiated by an instructor.

### Withdrawal from the University

To withdraw from *all* classes after having paid registration fees, a student must submit a request in person, withdraw using InTouch, or submit a signed request to the Office of the Registrar. The InTouch complete withdrawal option is only available through the first week of classes for a semester. During the unrestricted complete withdrawal period, a student may withdraw from all courses with marks of "W." During the restricted complete withdrawal period, a student may withdraw with marks of "W" only from courses that the instructors certify the student was passing at the time of withdrawal. See the *Schedule of Classes* or the *Summer Sessions Bulletin* for dates of the complete withdrawal periods. No one is permitted to withdraw from the university or to conduct any registration transaction in the last two weeks of the semester. The date of the complete withdrawal is always the date the withdrawal form or letter is received in the Office of the Registrar.

### Medical/Compassionate Withdrawal

Normally, a medical compassionate withdrawal request is made in cases where serious illness or injury (medical) or other significant personal situation (compassionate) prevents a student from continuing his or her classes and incompletes or other arrangements with the instructor are not possible. Usually, consideration is for complete withdrawal. All applications for withdrawal require thorough and credible documentation; application for less than a

complete withdrawal must be especially well documented to justify the selective nature of the medical compassionate withdrawal request.

**Medical Withdrawal**

When a student must withdraw from one or more classes for medical reasons, that student may request a medical withdrawal. This policy covers both physical health and mental health difficulties. A medical withdrawal aids the student in two ways: (1) it is considered an unrestricted withdrawal, regardless of when it occurs, and (2) according to the policies of the Student Fee Payment Office, the student may be refunded a greater portion of tuition and/or fees paid for the semester than the published university refund schedule would normally allow.

**Compassionate Withdrawal.** When a student must withdraw from one or more classes for significant personal reasons, not related to the student's physical or mental health (for example, care of a seriously ill child or spouse, or a death in the student's immediate family), that student may request a compassionate withdrawal. A compassionate withdrawal aids the student in the two ways listed above under "Medical Withdrawal."

Each college has a dean's representative medical compassionate withdrawal designee to review medical compassionate withdrawal requests. A student requesting a medical compassionate withdrawal is referred to the dean's designee of the college of the major. A nondegree student is referred to the dean's designee of the college with which he or she is primarily affiliated. The dean's designee determines the appropriateness of the medical/compassionate withdrawal request and whether an administrative hold is indicated. Removal of the hold must be authorized by the designee before the student can register for a future semester or be readmitted to the university.

Although the medical/compassionate withdrawal procedure may be used at any time during or after the close of the specified semester, the student is encouraged to submit the application as early as possible.

During the unrestricted withdrawal period (generally the first four weeks of a semester or the first six days of a summer session), a student who follows the regular withdrawal procedure will automatically be granted a "W" in each of his or her classes, regardless of the reasons for withdrawing and whether or not he or she is passing the classes. However, even during the unrestricted withdrawal period, a student must process a formal medical compassionate withdrawal to be eligible for consideration of a larger refund of tuition and/or fees than would be granted under regular unrestricted withdrawal procedures.

For both partial and complete withdrawal, during both the unrestricted withdrawal period and the restricted withdrawal period, a student who follows the medical compassionate withdrawal procedure will be granted a "W" in each of his or her classes upon approval of the medical compassionate withdrawal. The medical/compassionate withdrawal procedure will result in a special note line in the unofficial transcript. Even after the close of the semester, the dean's designee in the college of the student's major may approve a medical/compassionate withdrawal for each class for which a "W" is to be granted, regardless of which college offered the course(s). Refunds are not given beyond six months past the

close of the semester. Only one Request for Documented Medical Compassionate Withdrawal form needs to be filed with the college of the major, even if it assesses in more than one college are involved. The form should clearly specify each class for which the student is to receive a grade of "W." Signatures from the instructor(s) and/or department chair(s) for each class are not required; the dean's designee's signature is sufficient.

**GRADE POINTS**

For the purpose of computing the grade point average (GPA), grade points are assigned to each of the grades for each semester hour as follows: "A," four points, "B," three points, "C," two points, "D," one point, "E," zero points. GPAs are rounded to the nearest 100th of a grade point.

**Grade Point Average**

Grade points earned for a course are multiplied by the number of semester hours to produce honor points. For example, receiving an "A," which is assigned four grade points, in a three semester hour course would produce 12 honor points. The grade point average (GPA) is obtained by dividing the total number of honor points earned by the total number of semester hours graded. "A," "B," "C," "D," or "E." Other grades do not carry grade points. Semester GPA is based on semester net hours. Cumulative GPA is based on total net hours.

**Change of Grade**

Ordinarily the instructor of a course has the sole and final responsibility for any grade reported. Once the grade has been reported to the registrar, it may be changed upon the signed authorization of the faculty member who issued the original grade. Approval for the change is also required by the department chair and the dean of the college concerned. This policy also applies to the grade of "I" (incomplete).

**University Policy for Student Appeal Procedures on Grades**

**Informal.** The steps outlined below, beginning with step A, must be followed by any student seeking to appeal a grade. Student grade appeals must be processed in the regular semester immediately following the issuance of the grade in dispute (by commencement for fall or spring), regardless of whether the student is enrolled at the university. It is university policy that students filing grievances and those who are witnesses are protected from retaliation. Students who believe they are victims of retaliation should immediately contact the dean of the college in which the course is offered.

A. The aggrieved student must first undergo the informal procedure of conferring with the instructor, stating the evidence, if any, and reasons for questioning that the grade received was not given in good faith. The instructor is obliged to review the matter, explain the grading procedure used, and show how the grade in question was determined. If the instructor is a graduate assistant and this interview does not resolve the difficulty, the student may then go to the faculty member in charge of the course registered in faculty member or director of the course sequence with the problem.

B. If the grading dispute is not resolved in step A, the student may appeal to the department chair or other appro

appropriate chair of the area within the department (if any). The department chair may confer with the instructor to handle the problem. Step B applies only in departmental or college-level cases.

- C. If these discussions are not adequate to settle the matter to the complainant's satisfaction, the student may then confer with the dean of the college concerned or the dean designate, who will review the case. If unresolved, the dean or designate may refer the case to the college academic grievance hearing committee to review the case formally. In most instances, however, the grievance procedure does not go beyond this level.

**Formal.** The following procedure takes place after steps A, B, and C (or A and C) have been completed:

- D. Each college has on file in the office of the dean (and in each department of the college) the procedures and composition of the undergraduate or graduate academic grievance hearing committee for student grievances. Each college committee shall operate under grievance procedures as stated which satisfy due process requirements. The committee shall always meet with the student and the instructor in an attempt to resolve the differences. At the conclusion of the hearing, the committee shall send its recommendations to the dean.
- E. Final action in each case will be taken by the dean after full consideration of the committee's recommendation. Grade changes, if any are recommended, may be made by the dean. The dean shall inform the student, instructor, department chair (if any), the registrar, and the grievance committee of any action taken.

### Repeating Courses

An undergraduate course taken at ASU may be repeated for credit if the grade of "D," "E," or "W" or a mark of "X" is received. Undergraduate courses in which grades of "D" or "E" are received may be repeated only once. After an undergraduate student repeats 100- and 200-level courses, the student's transcript shows both grades, but the student's cumulative GPA reflects only the higher grade. After an undergraduate student repeats 300- or 400-level courses, the student's cumulative GPA and the transcript reflect both grades.

After completing the course, the student must file a Deletion Form with the Office of the Registrar. To be eligible for the deletion of "D" or "E" grades, the course must be repeated at ASU. Students who have graduated are not eligible to delete the grade for a course taken before the award of the ASU bachelor's degree.

This policy does not apply to seminar and independent study courses with different content each semester. This policy affects only undergraduate students and undergraduate courses.

### Demonstration of Mastery

An undergraduate student who receives a "D" in a course in which a "C" or higher is required may use the grade from an equivalent course taken elsewhere to demonstrate mastery at the "C" or higher level. However, the course may neither be transferred to ASU (since credit has already been given for the course) nor computed in the student's GPA.

### Midterm Report

Instructors are required to evaluate students at midterm for academic progress. A student who has been evaluated for a "D" or "F" at midsemester receives a midterm report. The midterm "D" and "E" grades are not recorded on the student's permanent record. Midterm reports are mailed to the student's local address of record.

### Final Grades

Grades may be viewed online at [www.asu.edu/registrar](http://www.asu.edu/registrar) or accessed through InTouch at 480/350-1500.

### Records Hold

The Office of the Registrar enforces a financial records hold or administrative hold on the records of a student when an outstanding financial obligation or disciplinary action has been reported.

When a hold is placed on a record, the following results may occur:

1. No official or unofficial transcript is issued.
2. Registration privileges are suspended.
3. Other student services may be revoked.

The hold remains effective until removed by the initiating office. It is the student's responsibility to clear the conditions causing the hold.

### Transcripts

The Office of the Registrar releases official transcripts *only upon the written request of the student*. The request must include the following information:

1. the student's name and former name(s);
2. the student ID number;
3. the date of birth; and
4. the dates of attendance.

The request for official transcript form is available online at [www.asu.edu/registrar](http://www.asu.edu/registrar).

The Office of the Registrar does not issue a transcript if the student has a financial records hold. The student must supply a specific address if the transcript is to be mailed. The fee for an official transcript for a student not enrolled is \$5.00 for the first copy. Additional copies ordered at the same time are \$1.00 each. The fee is \$1.00 per copy for a student enrolled for a current or future semester.

Unofficial transcripts may be requested in person at the Office of the Registrar, any registrar site, or by mail or fax (480-965-2295) if a signed release is enclosed. There is no charge for an unofficial transcript.

All in-person transcript requests require presentation of photo identification. Requests are not accepted from third parties without a written release from the student. For information on parental access to records, see "Access to Records," page 80.

## Retention and Academic Standards

**Class Standing.** A student's class standing is determined by the number of hours earned, as shown in the Class Standing table.

### Class Standing

Student	Hours Earned
Freshman	24 or fewer hours earned
Sophomore	25-55 hours earned
Junior	56-86 hours earned
Senior	87 or more hours earned
Graduate	Bachelor's degree from accredited institution

**Academic Good Standing.** For the purpose of retention, academic good standing for degree seeking students is defined as shown in the "Academic Good Standing" table.

A student who does not maintain the minimum GPA standard is placed on academic probation or is disqualified. A student on academic probation is in conditional good standing and is permitted to enroll. A student who has been disqualified is not in academic good standing and is not permitted to enroll for fall or spring semesters.

To transfer from one college to another within the university or to be eligible for readmission, a student must have a GPA of 2.00 or higher. The GPA determining good standing is computed on courses taken only at ASU.

For purposes of retention or transfer, an individual college may set higher GPA standards; otherwise, the university standards prevail. See the college sections of this catalog or contact the college deans' offices for statements regarding college retention standards.

### Academic Good Standing

Total Earned Hours	Minimum Cumulative GPA
24 or fewer	1.60
25-55	1.75
56 or more	2.00

**Meeting Basic Competencies.** New students are required to have completed a specific number of courses in the areas of American history, English, laboratory science, mathematics, social science, fine arts and foreign language. Students who are exempt from these requirements include students who have completed an Arizona General Education Curriculum or an associates degree, students admitted by GED and students who are 22 years of age or older with 24 or more transfer credits by the first day of the semester of admission. An admitted student who needs to meet competencies in one or more of these areas must satisfy the requirement within one year of the beginning of the student's first semester at ASU. Subject competencies in each area may be met by earning a grade of "D" or higher at ASU in an appropriate course(s) as listed in the "Basic Competencies" table, page 79.

**Appealing Basic Competencies.** A student who has not met all basic competencies at the end of one calendar year after the student's initial date of enrollment is not permitted to continue at ASU. Each student is notified that he or she may not register or, if already registered, that the registration has been canceled.

A student wishing to appeal the dismissal should submit a petition through his or her college. The colleges have three options in reviewing these appeals:

1. extending the student's end semester to allow one additional semester to complete the required course work;
2. allowing the student to substitute a course not currently approved to fulfill a competency area when an error has been made in advising or for other just causes; or
3. denying the petition.

College actions are forwarded to the Office of the Registrar for processing.

**Dean's List.** Undergraduate students who earn 12 or more graded semester hours ("A," "B," "C," "D," or "E") during a semester in residence at ASU with a GPA of 3.50 or higher are eligible for the Dean's List. A notation regarding Dean's List achievement appears *only* on the final grade report available online at [www.asu.edu/registrar](http://www.asu.edu/registrar)

**Satisfactory Academic Progress.** The university is required to publish and enforce standards of satisfactory academic progress for certain students (e.g., student athletes, students receiving financial aid, and students receiving veterans benefits).

Certification of satisfactory progress for student athletes is verified by the academic advisor and the dean's designee for certifying satisfactory progress. Certification of satisfactory progress for students receiving financial aid or veterans benefits is verified by Student Financial Assistance or the Veterans Services Section respectively. Students should contact their advisors or the appropriate office for additional information on satisfactory progress requirements.

**Probation.** A student's college assumes responsibility for enforcing academic standards and may place any student on probation who has failed to maintain good standing as previously defined. For purposes of probation and retention, an individual college may set higher GPA standards. A student on academic probation is required to observe any rules or limitations the college may impose as a condition for retention.

**Disqualification.** A student who is placed on probation at the end of a semester is subject to disqualification by the college at the end of the following semester if the conditions imposed for retention are not met.

Disqualification is exercised at the discretion of the college and becomes effective on the first day of the semester following college action. *A disqualified student is notified by the dean of the college or the Office of the Registrar and is not allowed to register in a fall or spring semester at the university until reinstated.* A student who has been disqualified may appeal to the college standards committee. A student who is disqualified may not attend as a nondegree student.

**Reinstatement.** If a student with a GPA of 2.00 or greater has been disqualified by one college and seeks to transfer to another college at ASU, the student may apply at the Readmissions Section (SSV B114) or directly to the college to which the student wishes and is qualified to transfer.

To be reinstated into an ASU college other than the disqualifying college, the student must submit an application for reinstatement to the University Undergraduate Admissions Board through the Readmissions Section of the Office of the Registrar

## Basic Competencies

Area	ASU Courses That May Be Used to Meet Basic Competencies
American history	Any one course: HIS 103, 104
English	Any one course: ENG 101, 105, 107; WAC 101, 107
Fine arts	Any undergraduate three semester hour course offered in the College of Fine Arts
Foreign language	Student must complete through the 102, 107, or 111 course level of any foreign language course
Laboratory science*	
Chemistry	Any one course: CHM 101, 107, 113, 117
Earth sciences	Any numbered selection <ol style="list-style-type: none"> <li>1. GLG 101 and 103</li> <li>2. GLG 110 and 111</li> <li>3. GPH 111</li> </ol>
Life sciences	Any one course: BIO 100, 113, 120, 181, 182, 201, PLB 105
Physics	Any numbered selection: <ol style="list-style-type: none"> <li>1. AST 111 and 113</li> <li>2. AST 112 and 114</li> <li>3. PHS 110</li> <li>4. PHY 101</li> <li>5. PHY 105</li> <li>6. PHY 111 and 113</li> <li>7. PHY 112 and 114</li> <li>8. PHY 121 and 122</li> <li>9. PHY 131 and 132</li> </ol>
Mathematics	Any one course: MAT 114, 117, 119, 122, 170, 210, 261, 270, 291
Social science	Any one course: ASB 102, ECN 111, 112, GCU 112, 121, 141, HIS 101, 101, 102; PGS 101, 101, 110, 120, 150, 160, SOC 101

\* The laboratory science requirement is designed to demonstrate competency in two separate laboratory science areas. Therefore, for example, if one lab science competency has already been met in life sciences either through high school course work, the AP or IB achievement test, or college course work, the second lab science course must be selected from chemistry, earth sciences, or physics.

To be reinstated into the same college from which the student was disqualified, the student must submit an application for reinstatement to the disqualifying college. When reinstatement includes readmission, application must be made to the Readmissions Section of the Office of the Registrar.

**Reinstatement Appeals.** A student wishing to appeal the decision of the standards committee of a college may submit an appeal to the University Undergraduate Admissions Board. The decision of the board is final.

**Academic Integrity.** The highest standards of academic integrity are expected of all students. The failure of any student to meet these standards may result in suspension or expulsion from the university or other sanctions as specified in the University Student Academic Integrity Policy. Violations of academic integrity include, but are not limited to, cheating, fabrication, tampering, plagiarism, or facilitating such activities. The University Student Academic Integrity Policy is available from the Office of the Senior Vice President and Provost and from the deans of the individual colleges.

**Suspension or Expulsion for Academic Dishonesty.** All decisions relating to expulsion or suspension that are concerned with academic dishonesty are the sole prerogative of the dean of the school or college in which the student has been admitted. These decisions of suspension or expulsion can be appealed in accordance with established university procedures. Application for reinstatement may be made to any of the academic units within the university after the

specified period of suspension. Merely having remained in a suspended status for a period of time does not, in itself, constitute a basis for reinstatement.

## Student Records

### Family Educational Rights and Privacy Act of 1974

The Family Educational Rights and Privacy Act of 1974, also known as the Buckley Amendment, sets forth the requirements governing the protection of the privacy of the educational records of students who are or have been in attendance at ASU.

#### Definitions

**Eligible Student.** For the purpose of this act, an *eligible student* is defined as any individual formally admitted to and enrolled at ASU.

**Record.** The term *record* includes any information or data recorded in any medium, including, but not limited to, hand writing, print, tapes, film, microfilm, microtche, and electronic means.

#### Types of Information

**Education Record.** The term *education record* refers to those records directly related to a student and maintained by an education institution. Two types of education records are subject to the provisions of this act: 1) directly information and 2) personally identifiable information. The term does not include those records specifically excluded by Section 99.3 of the privacy act.

**Directory Information.** The term *directory information* includes the following student information: name, local, permanent and ASU e-mail addresses, local telephone number, date and place of birth, citizenship, residency status, academic level, major field of study, college of enrollment, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student.

**Personally Identifiable Information.** The term *personally identifiable information* includes the name of a student's parent or other family member(s), a personal identifier such as the student's Social Security number, a list of personal characteristics, or other information that would make the student's identity easily traceable and any information, including directory information, that the student has indicated not to be released.

#### **Access to Records**

An eligible student may inspect and review the student's education records. Some form of photo identification must be displayed before access to education records is allowed.

Directory information may be released to anyone without consent of the student unless the student has indicated otherwise. Students may request that this information not be released by completing a form in the Office of the Registrar.

A request to withhold this information excludes the student from being listed in the annual directory only if the request is submitted to the Office of the Registrar before the end of the third week of the fall semester.

All other education records that contain personally identifiable information may not be released without the written consent of the student. A parent of a dependent student may challenge denial of such access by producing the most current copy of Internal Revenue Form 1040. If that form lists the student in question as a dependent, the parent is required to sign an affidavit that affirms that the student is his or her dependent. The affidavit is retained by the Office of the Registrar. Upon receipt of the affidavit, the university makes student records available to the parent for the rest of that calendar year as specified under the Buckley Amendment.

Students may grant access to parents or agencies by completing a form in the Office of the Registrar.

#### **Location of Policy and Records**

The custodian of education records at ASU is the Office of the Registrar. Copies of this policy are available in the following offices: Reserve sections of Hayden Library and the Noble Science and Engineering Library, the Office of the Registrar, Undergraduate and Graduate Admissions, and Student Life. The Office of the Registrar also maintains a directory that lists all education records maintained on students by ASU.



Students strolling on Orange Mall with the Music Building in the background

John MacIsaac photo



# University Graduation Requirements

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## UNIVERSITY REQUIREMENTS

All students enrolled in a baccalaureate degree program must fulfill the following university requirements to graduate.

### Credit Requirements

A minimum of 120 semester hours is required for graduation with a baccalaureate degree. A minimum of 45 semester hours in upper division courses is required for graduation. Some programs may require more than 45 upper division semester hours for graduation; refer to college graduation requirements for the specific number required.

Not more than 60 semester hours in independent learning courses and/or earned by comprehensive examination (including AP, CLEP, and IB exams) are accepted for credit toward the baccalaureate degree.

### Grade Point Requirement

A minimum cumulative grade point average (GPA) of 2.00 for all courses taken at ASU is required to graduate with a baccalaureate degree.

### General Studies Requirement

All students enrolled in a baccalaureate degree program must satisfy a university requirement of a minimum of 35 semester hours of approved course work. (See "General Studies," page 85.) For General Studies courses, see the "General Studies Courses" table, page 89, the course descriptions, the *Schedule of Classes*, and the *Summer Sessions Bulletin*.

Students transferring from Arizona community colleges with a certified completion of the appropriate Arizona General Education Curriculum (AGEC) will have satisfied all lower division General Studies requirements of the baccalaureate degree with which the AGEC articulates. For more details regarding the different versions of AGEC, refer to [www.abor.asu.edu/abor3/board/student/transfer/agec.html](http://www.abor.asu.edu/abor3/board/student/transfer/agec.html).

### First-Year Composition Requirement

Completion of both ENG 101 and 102 or ENG 105 with a grade of "C" or higher is required for graduation from ASU in any baccalaureate program (see page 83). International students from non-English speaking countries may meet the First Year Composition requirement by completing ENG 107 and 108 with a grade of "C" or higher.

**New or Transfer Students.** Before new students or transfer students can register for the first time at ASU, they must determine what courses to take to complete the university First Year Composition requirement, the students must then enroll immediately in composition courses and continue to do so every term until composition requirements are met. *College offices may grant waivers to the immediate and continual enrollment requirement when there are scheduling conflicts detrimental to the student's academic progress.* Transfer students from other Arizona colleges or universities can determine the acceptability of their composition courses by referring to the most recent Arizona Commission for Postsecondary Education *Course Equivalency Guide* in

consultation with an academic advisor. Composition courses transferred from out of state institutions must be evaluated and approved by advisors specifically designated for this purpose by the dean of each college.

The transfer student must file an application in the student's college for Equivalency of First Year Composition Requirements, along with a transcript and catalog descriptions of the composition courses to be transferred. The application, available in each college, should be filed immediately upon transfer of course work to ASU so that the student is able to enroll in an additional composition course, if required to do so.

For more information, the student should go to the appropriate college or school listed in the "Academic Advising" table on page 71.

### Resident Credit Requirement

Resident credit refers to a course that is offered in a regular semester, winter session, intersession, or summer session. Credit earned through comprehensive examinations is also included when calculating ASU resident hours. Credit earned through independent learning, advanced placement, the College Level Examination Program, or an International Baccalaureate Diploma/Certificate are excluded when calculating ASU resident hours.

**Campus Resident Credit Requirement.** 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.

### Guidelines for Determination of Catalog Year

The *General Catalog* is published annually. Department, division, school, college, and university requirements may change and are upgraded often. In determining graduation requirements, an undergraduate student may use only one edition of the *General Catalog* but may elect to follow any subsequent catalog. Students maintaining continuous enrollment at any public Arizona community college or university may graduate according to the requirements of the catalog in effect at the time of initial enrollment or according to the requirements of any single catalog in effect during subsequent terms of continuous enrollment. Students may maintain continuous enrollment whether attending a single public community college or university in Arizona or transferring among public institutions in Arizona while pursuing their degrees.

Students transferring among Arizona public higher education institutions must meet the admission, residency, and all curricular and academic requirements of the degree granting institution.

- 1 A semester in which a student earns course credit is counted toward *continuous* enrollment. Noncredit courses, audited courses, failed courses, or courses from which the student withdraws do not count toward the determination of *continuous* enrollment for catalog purposes. See examples A and B in the "Continuous Enrollment" table, page 82.

**Continuous Enrollment**

Student's Activity	Semester/Year	Status
<b>Example A</b>		
Admitted and earned course credit at an Arizona community college	Fall 1998	Active
Continued at an Arizona community college	Spring 1999	Active
	Fall 1999	
Transferred to an Arizona university	Spring 2000	Student enrolled under 1998-99 or any subsequent catalog
<b>Example B</b>		
Admitted and earned course credit at an Arizona community college	Fall 1997	Active
Enrolled but earned all "Ws," or "Es"	Spring 1998	Inactive
Enrolled in audit courses only	Fall 1998	Inactive
Nonattendance	Spring 1999	Inactive
Transferred to an Arizona university	Fall 1999	Student enrolled under 1999-2000 or any subsequent catalog
<b>Example C</b>		
Admitted and earned course credit at an Arizona community college	Fall 1997	Active
Nonattendance	Spring 1998	Inactive
	Fall 1998	
	Spring 1999	
Readmitted and earned course credit at an Arizona community college	Fall 1999	Active
Transferred to an Arizona university	Spring 2000	Student enrolled under 1999-2000 or any subsequent catalog
<b>Example D</b>		
Admitted and earned course credit at an Arizona community college	Fall 1996	Active
Nonattendance	Spring 1997	Inactive
Readmitted and earned course credit at an Arizona community college	Summer 1997	Active
Nonattendance	Fall 1997	Inactive
	Spring 1998	
Transferred to an Arizona university	Fall 1998	Student enrolled under 1996-98 or any subsequent catalog
<b>Example E</b>		
Admitted and earned course credit at an Arizona community college	Summer 1997	Active
Continued at an Arizona community college	Fall 1997	Active
	Spring 1998	
Nonattendance	Fall 1998	Inactive
Readmitted and earned course credit at an Arizona community college	Spring 1999	Active
Transferred to an Arizona university	Summer 1999	Student enrolled under 1996-98 or any subsequent catalog

2. Students who do not meet the minimum enrollment standard stipulated in number 1 during three consecutive semesters (fall/spring/fall or spring/fall/spring) and the intervening summer term at any public Arizona community college or university are no longer considered continuously enrolled. Note that students are not obligated to enroll and earn course credit during summer terms, but summer enrollment may be used to maintain continuous enrollment status. These students must meet requirements of the public Arizona community college or university catalog in effect at the time they are readmitted or of any single catalog in effect during subsequent terms of *continuous* enrollment after readmission. See examples C and D in the "Continuous Enrollment" table.
3. Students admitted or readmitted to a public Arizona community college or university during a summer term must follow the requirements of the catalog in effect the following fall semester or of any single catalog in effect during subsequent terms of *continuous* enrollment. See example E in the "Continuous Enrollment" table.
4. In areas of study in which the subject matter changes rapidly, material in courses taken long before graduation may become obsolete or irrelevant. Course work that is more than eight years old is applicable to completion of degree requirements at the discretion of the student's major department. Departments may accept such course work, reject it, or request that the student revalidate its substance. The eight-year limit on course work applies except when program accreditation agencies limit the life of course work to fewer than eight years. Departments may also require students to satisfy current major requirements rather than major requirements in earlier catalogs, when completing earlier requirements is no longer possible or educationally sound.
5. Enrollment by Arizona community college students in nontransferable courses still constitutes enrollment for

purposes of determining whether the student has been continuously enrolled. For example, if a student takes two semesters of cooperative education classes, which are not transferable to the university but constitute *continuous* enrollment at the community college, the university should consider it *continuous* enrollment.

6. Exceptions made by an institution apply only to the institution that made the exception. For example, if the community college departments accepted credit that was more than eight years old, the university department to which the student transfers has the right and the obligation to reevaluate any credit more than eight years old.

Inquiries about these guidelines may be directed to the student's academic advisor.

### Declaration of Graduation

Students following the curriculum requirements of the 1996–98 or later catalog editions may be eligible to file a Declaration of Graduation using the Degree Audit Reporting System (DARS).

DARS is an automated process that matches courses a student has completed with the requirements of a particular academic degree program, resulting in a report that shows the student which requirements are satisfied and which requirements remain to be fulfilled, thus providing a guide for efficient selection of courses toward graduation. For example, a Biology major would request a Degree Audit Report that would show how his or her completed ASU and transfer course work would apply to the biology degree program.

A student must review his or her degree audit with the academic advisor and submit a Declaration of Graduation within the semester he or she earns the 87th semester hour. Students who have not met the above requirement are prevented from further registration.

Students following the curriculum requirements of the 1994–96 or earlier catalog editions, plus selected students following later catalogs, will follow the Program of Study requirement instead of the Declaration of Graduation. Inquiries about whether to follow the Declaration of Graduation procedure or the Program of Study procedure may be directed to the academic advisor.

### Program of Study Requirements

A student following the curriculum requirements of the 1994–96 or earlier catalog editions, plus selected students following later editions, must file an Undergraduate Program of Study for graduation within the semester the student earns his or her 87th semester hour. The Program of Study guides the student in accomplishing successful completion of degree requirements in a timely manner. Students who have not met the above requirement are prevented from further registration.

Program of Study forms and procedural information are available from the Graduation Section at SSV B113A, at any registrar's office, or online at [www.asu.edu/registrar/forms](http://www.asu.edu/registrar/forms).

### Application for Graduation Requirements

The following steps are required to complete the graduation process:

1. Register for the final semester.
2. Pay the graduation fee at Cashiering Services. Note the deadline date listed in the "University Calendar," page 14.
3. Submit the fee receipt to the Graduation Section, SSV B113A, and apply for graduation. The Degree Audit Report or Program of Study is reviewed at this time and the graduation date and eligibility to graduate are verified.
4. Complete all course work listed on the Degree Audit Report or Program of Study by graduation date.

For more information about application for graduation requirements at ASU West, contact ASU West Admissions and Records, UCB 120.

Students must comply with the above requirements to graduate.

The Application for Graduation along with the Degree Audit Report or Program of Study is reviewed to verify graduation eligibility.

### Petition for Variance from Degree

Any student wishing to have a college or university degree requirement variance must petition the standards committee of the college in which the student is enrolled. In addition, variance from university degree requirements must be approved by the Main Campus Standards Committee.

All petitions must originate with the student's advisor. Refer to the college sections of this catalog for college and department requirements.

**Main Campus Standards Committee.** This committee advises the Office of the Senior Vice President and Provost regarding undergraduate student petitions that concern university-wide academic requirements. These requirements include but are not limited to requirements on the amount of transfer credit, graduation requirements, limits on credit by examination, and requirements for a second baccalaureate degree (see "Overview of Graduation Requirements," below). To petition for a variance from such university requirements, the normal department, division, school, and college forms and procedures are used. Only petitions that have been denied at the college level are forwarded to the Main Campus Standards Committee.

### OTHER REQUIREMENTS

The separate units of the university, such as colleges, schools, and departments, have specific requirements for graduation that must be satisfied for a baccalaureate degree. For those requirements, see the appropriate *General Catalog* section. Students are encouraged to consult with an academic advisor in planning a program to ensure that it meets the various requirements. A well-planned program may enable a student to concurrently satisfy a portion of the General Studies requirement together with a portion of a college or major requirement.

### OVERVIEW OF GRADUATION REQUIREMENTS

At ASU, students take classes that fulfill four types of requirements. As illustrated in the "Graduation Requirements" diagram, page 84, some courses can fulfill two or more types of requirements, but other courses fulfill only

one requirement. The total semester hours needed to graduate are represented by the largest circle. The university minimum is 120 semester hours. Some majors, however, require more than 120 semester hours.

Although the three shaded circles are equal in size and the white circle is larger than all three, the total number of semester hours for each type of requirement may vary.

**University Requirements.** The light gray circle represents university requirements. The General Studies requirement and the First-Year Composition requirement are among the university requirements. For General Studies, a minimum of 35 semester hours in five core and three awareness areas is required. For more information, see "General Studies," page 85.

**College Requirements.** The medium gray circle represents college requirements. Some colleges and schools have additional requirements, especially the College of Liberal Arts and Sciences. It is important that you understand the requirements of your college.

**Major.** The dark gray circle represents the requirements of the major. The semester hours required for a major may be as low as 30 hours or as high as 63 hours.

**Electives/Minor.** The white circle represents electives and the requirements of a minor. A minor typically adds an additional 18 to 25 semester hours. Though every student must eventually declare a major, a minor is not required. For more information on minors, see "Minors, Certificates, and Interdisciplinary Studies," page 110. Some courses, while providing semester hours toward graduation, fall outside the shaded circles and are not required in your program for graduation. These courses are electives. Some majors leave no room for electives within the minimum 120 semester hours required to graduate.

## General Graduation Information

**Graduation with Academic Recognition.** An undergraduate student must have completed at least 60 semester hours of resident credit at ASU to qualify for graduation with academic recognition for a baccalaureate degree.

The cumulative GPA determines the designation, as shown in the "Academic Recognition" table. The cumulative GPA for these designations is based on only ASU resident course work. For example, ASU independent learning course grades are not calculated in the honors GPA. All designations of graduation with academic recognition are indicated on the diploma and the ASU transcript. Graduation with academic recognition applies only to undergraduate degrees.

**Academic Recognition**

Cumulative GPA	Designation
3.40–3.59	<i>cum laude</i>
3.60–3.79	<i>magna cum laude</i>
3.80–4.00	<i>summa cum laude</i>

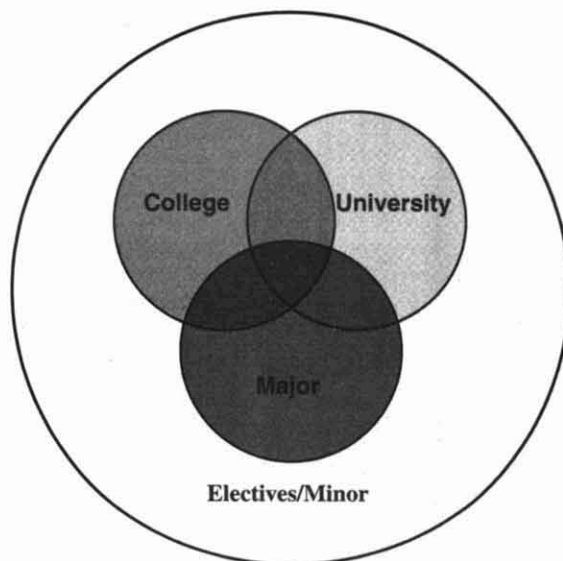
A student who has a baccalaureate degree from ASU and is pursuing a second baccalaureate degree at ASU (with a minimum of 30 hours of resident credit) is granted academic recognition on the second degree based on the semester hours earned subsequent to the posting of the first degree. If fewer than 60 semester hours are completed at ASU subsequent to completion of the first ASU degree, the level of academic recognition can be no higher than that obtained on the first degree. If 60 or more semester hours are completed at ASU after completion of the first ASU degree, the level of academic recognition is based on the GPA earned for the second ASU degree. Inquiries about graduation with academic recognition may be directed to the Graduation Section, 480/965-3256.

**Second Baccalaureate Degree.** The student seeking a second baccalaureate degree must meet admission criteria for that degree. After conferral of the first degree, a minimum of 30 semester hours in resident credit must be successfully completed at the ASU campus from which the second baccalaureate degree will be awarded. The student must meet all degree and university requirements of the second degree.

**Concurrent Degrees.** More than one baccalaureate degree may be pursued concurrently if prior approval is given by the standards committee(s) of the college(s) offering the degrees. Students may receive concurrent degrees if they meet the minimum requirements for both degrees.

**Graduate Degrees.** See "Graduate College," page 301, and "College of Law," page 319, for graduate degrees offered and statements of requirements for graduate degrees. A *Graduate Catalog* may be obtained from the Graduate College or the ASU Bookstore.

**Graduation Requirements**



# General Studies

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All undergraduate students must fulfill the General Studies requirement.

General Studies is based on four principles. The first is the distinction between skill and knowledge—the instrumental skills by means of which knowledge is acquired and communicated and the knowledge itself in the sense of fact, information, or conclusions. Second is the distinction between skill in the use of language and skill in the use of figures—literacy and numeracy. Third is the conventional division of knowledge into the humanities, the social sciences, and the natural sciences. And fourth is the concept of the university graduate as a person who is not only prepared for advanced study or a particular profession, but also is amply prepared to lead a constructive and satisfying personal, social, and civic or political life. This principle implies a commonality of knowledge—that is, knowledge shared with others), skill in learning and in communicating with others, and a diversity of learning that frees the person to enjoy the diversity of human potentiality. In addition to the four principles, the program recognizes the value of sustained experience in the acquisition of a skill or the mastery of a body of knowledge, the increasing importance of literacy and numeracy skills because of the rapid growth of modern knowledge, the utility of historical perspective, and the internationalization of modern life.

The General Studies Program consists of *five core areas* and *three awareness areas*. The core areas are as follows:

1. literacy and critical inquiry (L1 and L2),
2. numeracy (N1, N2, N3);
3. humanities and fine arts (HU);
4. social and behavioral sciences (SB); and
5. natural sciences (S1 and S2).

These areas provide training in basic academic skills and assure that students are introduced to the traditional branches of knowledge.

The *three awareness areas* are as follows:

1. cultural diversity in the United States (C);
2. global awareness (G), and
3. historical awareness (H).

These areas contribute to the development of an international perspective, foster an understanding of current human events by study of the past, and promote appreciation of cultural diversity within the contemporary United States.

The courses approved by the ASU Main General Studies Council (for ASU Main and ASU East) for meeting the General Studies requirement are listed in the “General Studies Courses” table, page 89; in the course descriptions, and in the *Schedule of Classes* each academic term. The courses approved by the ASU West General Studies Council can be found in the *ASU West Catalog* and in the *Schedule of Classes*.

## General Studies Requirement

All students enrolled in a baccalaureate degree program must successfully complete a minimum of 35 semester

hours of approved General Studies courses. The required distribution of General Studies courses among the core areas and awareness areas is described below. It is important to note that 35 semester hours must be taken in the five core areas. Students also must take courses that satisfy each of the three awareness areas. Note, however, that the awareness area requirement does not mean that the student must exceed 35 hours. Many courses concurrently satisfy a core requirement and an awareness area requirement.

The following conditions apply in taking courses to satisfy the General Studies requirement:

1. a course may satisfy a core and an awareness area requirement concurrently;
2. a course may not be used to concurrently satisfy requirements in two core areas, even if it is approved for more than one core area; and
3. a course may be used to concurrently satisfy requirements in two awareness areas if it is approved for those areas.

There is no limit to the number of advanced placement (AP) or CLEP credits that can be used to meet the General Studies requirement—see “Special Programs for Advanced Placement Credit,” page 67. However, the natural sciences (S1 and S2) and literacy and critical inquiry (L1 and L2) portions of the General Studies requirement are not satisfied by CLEP.

First Year Composition is a university requirement of all students that is separate from and in addition to General Studies.

## Transfer Credit

The Arizona General Education Curriculum (AGEC) offered by the Arizona community colleges, is composed of 35 semester hours of lower division general education course work.

The AGEC has three forms: AGECE A, AGECE B, and AGECE S. Refer to [http://www/abor.asu.edu/abor3/board/student/transfer\\_agec.html](http://www/abor.asu.edu/abor3/board/student/transfer_agec.html) for a detailed description of each AGECE.

Completion of the appropriate AGECE fulfills the university lower division general education requirements of the baccalaureate degree with which AGECE articulates but may not apply to degrees articulated with the Transfer Guide’s Exceptional Requirements Pathway. Students completing the AGECE are still required to fulfill lower division program requirements and prerequisites within their college and major and/or minor areas of study. In order to most efficiently complete a degree program, students should select courses to meet the ACEC requirements that also fulfill program requirements in the college and major they intend to pursue upon transfer.

Students transferring from other accredited institutions of higher education ordinarily are given General Studies credit work done in those institutions insofar as it is equivalent in content to General Studies courses at this university.

### College and School Requirements

Colleges and schools may require their students to take specific courses to satisfy the General Studies requirement. In some instances, the number of semester hours exceeds the minimum 35 semester hours because of the required college or school courses.

Also, colleges and schools can define requirements that go beyond the General Studies requirement and require additional courses. Those colleges and schools can designate specific General Studies approved courses that students must take to satisfy college or school requirements.

Students are encouraged to consult with an academic advisor in planning a program to ensure that it meets the various requirements. A well-planned program may enable a student to efficiently satisfy requirements at the university, college, or school, and department levels.

### CORE AREAS

#### Literacy and Critical Inquiry (L1 and L2)

Literacy is here defined broadly as communicative competence in written and oral discourse, critical inquiry is defined as the gathering, interpretation, and evaluation of evidence. Building on the proficiency attained in traditional freshman composition courses, the literacy and critical inquiry requirements help students sustain and extend their ability to read critically and communicate clearly through language. Thus the literacy and critical inquiry requirement stipulates a sequence of two courses beyond First Year Composition.

**Requirement.** Six semester hours are required. One L1 course is required, typically at the sophomore level, in which students learn how to gather, interpret, and evaluate evidence and to express their findings in writing or speech. This course includes a series of formal, graded, and written or spoken assignments. The L1 course is preferably taken after completion of the First Year Composition requirement. Completion of one semester of First Year Composition is required.

One L2 upper division course is required with advanced subject matter and rigorous critical writing assignments. The course should be taken in the student's major discipline and may also count toward the major.

#### Numeracy (N1, N2, and N3)

The numeracy requirement is intended to ensure that students have skill in basic mathematics, can use mathematical analysis in their chosen fields, and can understand how computers can make mathematical analysis more powerful and efficient. Numeracy thus has three components. First, the acquisition of essential skill in basic mathematics requires the student to complete a course in college algebra or to demonstrate a higher level of skill by completing a course for which college algebra is a prerequisite. The second component, the real world application of mathematical reasoning, requires the student to take a course in the use of quantitative analysis to solve problems of substance. Many students may use courses in statistics to satisfy this requirement. The third component of numeracy requires use of the computer to assist in serious analytical work. Computers are widely used to study the implications of social decisions or to model physical systems, and computer modeling courses are available in many major programs.

**Requirement.** Six semester hours are required. *One course must be selected from the mathematics category; a second course must be selected from either of the remaining two categories listed below.*

1. **Mathematics.** A course in college mathematics (i.e., MAT 114), college algebra (i.e., MAT 117), precalculus (i.e., MAT 170), or any other mathematics course for which college algebra is a prerequisite fits this category.
2. **Statistics and Quantitative Reasoning.** Courses that emphasize the use of statistics or other mathematical methods in the interpretation of data and in describing and understanding quantitative relationships fit this category. The course selected can be taken in the student's major discipline and can count toward the major's semester hour requirements.
3. **Computer Applications.** Courses that involve the use of computer programming languages or software in the development of skills in analytical thinking fit this category. The course selected can be taken in the student's major discipline and can count toward the major's semester hour requirements.

#### Humanities and Fine Arts (HU)

The humanities are concerned with questions of human existence and the universality of human life, questions of meaning and the nature of thinking and knowing, and questions of moral, aesthetic, and other human values. The humanities investigate these questions in both the present and the past and make use of philosophy, foreign languages, linguistics and communication studies, religious studies, literature and fine arts. The fine arts constitute the artist's creative deliberation about reality, meaning, knowledge, and values. The humanities and fine arts core area enables students to broaden and deepen their consideration of basic human values and their interpretation of the experiences of human beings.

**Requirement.** See "Combined Requirement," below.

#### Social and Behavioral Sciences (SB)

The social and behavioral sciences provide scientific methods of inquiry and empirical knowledge about human behavior, both within society and individually. The forms of study may be cultural, economic, geographic, historical, linguistic, political, psychological, or social. The courses in this area address the challenge of understanding the diverse natures of individuals and cultural groups who live together in a world of diminishing economic, linguistic, military, political and social distance.

**Combined Requirement.** *A total of 15 semester hours must be completed in the following two core areas: (1) social and behavioral sciences and (2) humanities and fine arts. Four conditions must be satisfied:*

1. A minimum of six semester hours must be taken in one core area and nine hours in the other core area.
2. At least one course within the 15 semester hours must be at the upper division level.
3. Two courses from the same department in either core area are required.
4. Courses from at least two departments in either core area must be taken.

### Natural Sciences (S1 and S2)

Courses in the natural sciences core area help the student to develop an appreciation of the scope and limitations of scientific capability to contribute to the quality of society. Knowledge of methods of scientific inquiry and mastery of basic scientific principles and concepts, in particular those that relate to matter and energy in living and nonliving systems, are stressed. Firsthand exposure to scientific phenomena in the laboratory is important in developing and understanding the concepts, principles, and vocabulary of science. At least one of the two laboratory courses required in the natural sciences core area must include an introduction to the fundamental behavior of matter and energy in physical or biological systems.

**Requirement.** Eight semester hours are required. One laboratory course in the natural sciences that includes a substantial introduction to the fundamental behavior of matter and energy in physical or biological systems is required.

A second laboratory course in the natural sciences selected, for example, from anthropology, astronomy, biology, chemistry, experimental psychology, geology, microbiology, physical anthropology, physical geography, physics, or plant biology is required.

### AWARENESS AREAS

Students must complete courses that satisfy each of the three awareness areas. Courses that are listed for a core and an awareness area may satisfy both requirements concurrently, as may courses that are listed for more than one awareness area.

#### Cultural Diversity in the United States (C)

The contemporary "culture" of the United States involves the complex interplay of many different cultures that exist side by side in various states of harmony and conflict. The U.S. history involves the experiences not only of different groups of European immigrants and their descendants, but also of diverse groups of American Indians, Hispanic Americans, African Americans, and Asian Americans—all of whom played significant roles in the development of contemporary culture and together shape the future of the United States. At the same time, the recognition that gender, class, and religious differences cut across all distinctions of race and ethnicity offers an even richer variety of perspectives from which to view oneself. Awareness of cultural diversity and its multiple sources can illuminate the collective past, present, and future and can help to achieve greater mutual understanding and respect.

The objective of the cultural diversity requirement is to promote awareness and appreciation of cultural diversity within the contemporary United States. This is accomplished through the study of the cultural, social, or scientific contributions of women and minority groups, examination of their experiences in the United States, or exploration of successful or unsuccessful interactions between and among cultural groups.

#### Global Awareness (G)

Human organizations and relationships have evolved from being family and village centered to the modern global interdependence that is apparent in many disciplines—for example, contemporary art, business, engineering, music, and the natural and social sciences. Many serious local and

national problems are world issues and require solutions that exhibit mutuality and reciprocity. These problems occur in a wide variety of activities, such as food supply, ecology, health care delivery, language planning, information exchange, economic and social developments, law, technology transfer, and even philosophy and the arts. The global awareness area recognizes the need for an understanding of the values, elements, and social processes of cultures other than the culture of the United States. The global awareness area includes courses that recognize the nature of other contemporary cultures and the relationship of the American cultural system to generic human goals and welfare.

Courses that meet the requirement in global awareness are of one or more of the following types:

1. in-depth area studies which are concerned with an examination of culture-specific elements of a region of the world, country, or culture group;
2. the study of contemporary non-English language courses that have a significant cultural component;
3. comparative cultural studies with an emphasis on non-U.S. areas; and
4. in-depth studies of non-U.S.-centered cultural interrelationships of global scope such as the global interdependence produced by problems of world ecology, multinational corporations, migration, and the threat of nuclear war.

#### Historical Awareness (H)

The historical awareness area aims to develop a knowledge of the past that can be useful in shaping the present and future. Because historical forces and traditions have created modern life and lie just beneath its surface, historical awareness is an aid in the analysis of present-day problems. Also, because the historical past is a source of social and national identity, historical study can produce intercultural understanding by tracing cultural differences to their origins in the past. Even the remote past may have instructive analogies for the present.

The historical awareness area consists of courses that are historical in method and content. In this area, the term "history" designates a sequence of past events or a narrative whose intent or effect is to represent such a sequence. The requirement presumes that these are human events and that history includes all that has been felt, thought, imagined, said, and done by human beings. History is present in the languages, art, music, literature, philosophy, religion, and the natural sciences, as well as in the social science traditionally called history.

### GENERAL STUDIES COURSES

The following ASU Main and ASU East General Studies courses satisfy the requirements of the five core areas and three awareness areas. General Studies courses are regularly reviewed. Since courses are occasionally added to and deleted from the list, students should always consult the *Schedule of Classes* each semester to see which courses currently meet the General Studies requirement.

A student receives the General Studies credit a course carries in the semester in which the course is taken, with one exception: a course listed on an approved program of study but subsequently deleted from the General Studies list.

retains the General Studies credit it carried when the program of study was approved.

Under each core and awareness area, courses are presented alphabetically by course prefix. The course prefix is followed by course number and course title. See "Key to Course Listing Codes" table, page 59.

The "Key to General Studies Credit Abbreviations" table identifies which requirement(s) the course meets. This key is also used in the *Schedule of Classes*. General Studies courses are also identified following course descriptions.

The campus codes "M" (for ASU Main) and "W" (for ASU West) identify the campus that maintains academic control over the course (i.e., course content, registration restrictions, General Studies designations, and other curricular matters). ASU East courses are listed under the "M" campus code. The campus code is not used in the catalogs but appears in the *Schedule of Classes*, on transcripts, and other enrollment and registration records.

### Key to General Studies Credit Abbreviations

Code	Description
L1	Literacy and critical inquiry core courses (intermediate level)
L2	Literacy and critical inquiry core courses (upper division)
N1	Numeracy core courses (mathematics)
N2	Numeracy core courses (statistics and quantitative reasoning)
N3	Numeracy core courses (computer applications)
HU	Humanities and fine arts core courses
SB	Social and behavioral sciences core courses
S1	Natural sciences core courses (introductory)
S2	Natural sciences core courses (additional courses)
C	Cultural diversity in the United States awareness courses
G	Global awareness courses
H	Historical awareness courses
/	or
.	and



Computing Commons Building at night

John MacIsaac photo



General Studies Courses

	L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
--- 493 Honors Thesis (See description on page 58. Only three semester hours may fulfill L2 requirement.)		L2										
ACC 330 Enterprise Process Analysis and Design	L1											
430 Taxes and Business Decisions		L2										
AES 301 Air Force Leadership Studies I		L2										
303 Air Force Leadership Studies II		L2										
401 Preparation for Active Duty I		L2										
AFH 353 African American Literature: Beginnings Through the Harlem Renaissance (Cross-listed as ENG 353)		L2				HU				C		
354 African American Literature: Harlem Renaissance to the Present (Cross-listed as ENG 354)		L2				HU				C		
AFS 363 African American History I (Cross-listed as HIS 363)							SB			C		H
364 African American History II (Cross-listed as HIS 364)							SB			C		H
AGB 250 World Food Dynamics											G	
258 International Agribusiness											G	
351 Management Science					N3							
360 Agribusiness Statistics				N2								
414 Agribusiness Analysis		L2										
450 International Agricultural Development											G	
455 Resource Management							SB					
456 World Agricultural Resources											G	
AMT 308 Air Transportation											G	
ANP 236 Introduction to Computer Modeling (Cross-listed as DSC/PUP 236)					N3							
APH 100 Introduction to Environmental Design (Cross-listed as DSC/PUP 100)						HU					G	H
200 Introduction to Architecture						HU					G	
300 World Architecture I/Western Cultures						HU					G	H
301 World Architecture II/Eastern Cultures											G	
304 American Architecture						HU						
305 Contemporary Architecture						HU						
313 History of Western Architecture I		L2				HU						
314 History of Western Architecture II		L2				HU						
411 History of Landscape Architecture (Cross-listed as PLA 310)												H
414 History of the City (Cross-listed as PUP 412)												H
441 Ancient Architecture						HU						
443 Renaissance Architecture						HU						
444 Baroque Architecture						HU						
446 20th-Century Architecture I						HU						
447 20th-Century Architecture II						HU						
ARA 303 Art Appreciation and Human Development						HU						
488 Understanding Art		L2				HU						
ARB 201 Intermediate Arabic											G	
202 Intermediate Arabic											G	
ARS 100 Introduction to Art						HU						
101 Art of the Western World I						HU						H
102 Art of the Western World II						HU						H
201 Art of Asia						HU						H
202 Art of Africa, Oceania, and the Americas						HU						H
300 Introduction to Art						HU						
302 Art of Africa, Oceania, and the Americas						HU						H
340 Art in America						HU						H

General Studies Courses (continued)

	L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
400 History of Printmaking						HU						H
402 Art of Ancient Egypt						HU						H
404 Greek Art						HU						H
406 Roman Art						HU						H
410 Early Christian and Byzantine Art						HU						H
412 Early Medieval Art						HU						H
414 Romanesque Art						HU						H
416 Gothic Art						HU						H
418 Renaissance Art in Northern Europe						HU						H
420 Early Renaissance Art in Italy						HU						H
422 Italian High Renaissance Art and Mannerism						HU						H
424 Italian Baroque Art						HU						H
426 Art of the 17th Century in Northern Europe						HU						H
428 Art of the 18th Century						HU						H
430 Art of Spain and Its Colonies						HU						H
432 From David to Daumier: European Art 1780-1860						HU						H
434 From Courbet to Cézanne: History of European Art 1860-WWI						HU						H
436 Art at the Turn-of-the-Century: 1885-1914						HU						H
438 Art of the 20th Century I						HU						H
439 Art of the 20th Century II						HU						H
442 Critical Issues in American Painting I						HU						H
443 Critical Issues in American Painting II						HU						H
444 Modern American Art, 1900-1945						HU						H
450 19th Century Photography						HU						H
451 20th-Century Photography						HU						H
457 History of Art Criticism						HU						H
458 Critical Theories in the Visual Arts						HU						H
462 Precolumbian Art I						HU						H
463 Precolumbian Art II						HU						H
465 Native North American Art						HU						H
466 Native American Art of the Southwest						HU				C		H
468 Art of the Arctic and Northwest Coast						HU						H
469 Mexican Art						HU						H
472 Art of China						HU						H
473 Art of Japan						HU						H
475 Chinese Painting						HU						H
480 Research Methods		L2										
485 Women in the Visual Arts		L2										
ART 444 Computer Art I					N3							
446 Computer Art II					N3							
ASB 102 Introduction to Cultural and Social Anthropology							SB				G	
202 Ethnic Relations in the United States										C		H
211 Women in Other Cultures											G	
222 Buried Cities and Lost Tribes: Our Human Heritage						HU						
231 Archaeological Field Methods									S2			
240 Introduction to Southeast Asia (Cross-listed as GCU/HIS/POS/REL 240)											G	
242 Asian American Experiences: An Anthropological Perspective	L1									C		
250 Anthropology Topics	L1											
302 Ethnographic Field Study in Mexico	L1						SB				G	
311 Principles of Social Anthropology							SB					
321 Indians of the Southwest					L2		SB			C		H
322 Indians of Mesoamerica							SB				G	
323 Indians of Latin America							SB				G	
324 Peoples of the Pacific											G	
325 Peoples of Southeast Asia											G	
326 Human Impacts on Ancient Environments							SB					H
330 Principles of Archaeology							SB					





General Studies Courses (continued)

		L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
	467		L2										
	Both CHM 464 and 466 must be taken to secure L2 credit												
CIS	211					N3							
CLS	451		L2										
	Both CLS 451 and 460 must be taken to secure L2 credit												
	460		L2										
	Both CLS 451 and 460 must be taken to secure L2 credit												
COB	300		L2										
COM	100							SB					
	110							SB					
	222	L1											
	225	L											
	230							SB					
	241	L1					HU						
	250							SB					
	263							SB			C	G	
	308		L2										
	316							SB			C		
	319							SB					
	320							SB					
	321		L2				HU						H
	323										C		
	325	L1											
	344						HU				C		
	357							SB					
	371							SB			C	G	
	410							SB					
	411							SB					
	421						HU						
	426							SB					
	441						HU						
	445						HU						
	446						HU				C		
	451							SB					
	463							SB				G	
CON	101						HU					G	H
	389					N3							
	472		-										
	495					N3							
	496		L2										
CSE	100					N3							
	181					N3							
	181					N3							
	183					N3							
	200					N3							
	211					N3							
	423		L2										
	438		L2										
CSH	310						HU				C		
	351						HU				C		
	363		L2				HU				C		
	Cross-listed as ENG 363												
	485		L2				HU				C		
CSS	331										C		
	336										C		H
	340										C		
	432										C		

General Studies Courses (continued)

			L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
DAH	100	Introduction to Dance						HU						
	300	Focus on Dance						HU						
	301	Philosophy and Criticism of Dance		L2				HU					G	
	302	Cross Cultural Dance Perspectives		L2				HU						
	401	Dance History I						HU						
	402	Dance History II						HU						
DAN	423	Dance, Computers, and Multimedia					N3							
DSC	100	Introduction to Environmental Design (Cross listed as APH/PUP 100)						HU					G	H
	101	Design Awareness						HU					G	
	236	Introduction to Computer Modeling (Cross listed as ANP/PUP 236)					N3							
ECE	100	Introduction to Engineering Design					N3							
	300	Intermediate Engineering Design	L1											
	380	Probability and Statistics for Engineering Problem Solving				N2								
	400	Engineering Communications		L2										
ECN	111	Macroeconomic Principles							SB					
	112	Microeconomic Principles							SB					
	304	Current Issues in Economics and Politics	L1						SB					
	306	Survey of International Economics (Cross listed as IBS 306)							SB				G	
	313	Intermediate Macroeconomic Theory							SB					
	314	Intermediate Microeconomic Theory							SB					
	331	Comparative Economic Systems							SB				G	
	360	Economic Development							SB				G	
	365	Economics of Russia and Eastern Europe							SB				G	
	404	History of Economic Thought							SB					
	421	Earnings and Employment		L2					SB					
	436	International Trade Theory							SB				G	
	438	International Monetary Economics							SB				G	
	441	Public Finance		L2					SB					
	450	Law and Economics		L2					SB					
	480	Introduction to Econometrics				N2								
EDP	303	Human Development		L2										
	310	Educational Psychology							SB					
	454	Statistical Data Analysis in Education				N2								
EEE	490	Senior Design Laboratory		L2										
EMC	321	Computer Literacy					N3							
	323	Computer Applications					N3							
ENG	200	Critical Reading and Writing About Literature	L1					HU						
	201	World Literature						HU						H
	202	World Literature						HU						H
	204	Introduction to Contemporary Literature						HU						
	212	English Prose Style	L1											
	215	Strategies of Academic Writing	L1											
	216	Persuasive Writing on Public Issues	L1											
	217	Writing Reflective Essays	L1											
	218	Writing About Literature	L1											
	221	Survey of English Literature						HU						H
	222	Survey of English Literature						HU						H
	241	American Literature						HU						
	242	American Literature						HU						
	245	Popular Culture Issues	L1											
	301	Writing for the Professions	L1											
	303	Classical Backgrounds of English Literature						HU						
	307	Utopian Literature		L2				HU						H



## General Studies Courses (continued)

		L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
	448 Applied Sport Psychology		L2										
	460 Theory of Strength Training		L2										
ERS	130 Soils and Environmental Quality								S1	S2			
	246 Introduction to the Environmental Sciences											G	
	350 Environmental Statistics				N2								
	480 Ecosystem Management and Planning		L2										
ETC	100 Languages of Technology					N3							
FAS	330 Personal Growth in Human Relationships							SB					
	331 Marriage and Family Relationships							SB					
	361 Introduction to Family/Child Research Methods		L1										
	370 Family Ethnic and Cultural Diversity										C		
	435 Advanced Marriage and Family Relationships		L2					SB					
FIN	456 International Financial Management											G	
	461 Financial Cases and Modeling		L2										
FLA	150 Introduction to East Asian Culture						HU					G	
	323 Survey of Literature of the Soviet Era in Translation		L2				HU					G	
	400 Linguistics							SB					
	420 Foreign Literature in Translation						HU					G	
	421 Japanese Literature in Translation		L2				HU					G	
FON	344 Nutrition Services Management		L1										
	448 Community Nutrition		L2										
FRE	201 Intermediate French I											G	
	202 Intermediate French II											G	
	205 Readings in French Literature											G	
	207 French for International Professions II											G	
	311 French Conversation											G	
	312 French Composition											G	
	319 Business Correspondence and Communication											G	
	321 French Literature		L2				HU						H
	322 French Literature		L2				HU						
	411 Advanced Spoken French											G	
	412 Advanced Written French											G	
	415 French Civilization I						HU						
	416 French Civilization II						HU					G	
	441 French Literature of the 17th Century						HU						
	442 French Literature of the 17th Century						HU						H
	445 French Literature of the 18th Century		L2				HU						
	452 French Novel of the 19th Century						HU						
	453 Theater of the 19th Century		L2				HU						
	461 Preatomic Literature						HU						
	462 Postatomic Literature						HU						
	471 The Literature of Francophone Africa and the Caribbean		L2				HU						
GCU	102 Introduction to Human Geography							SB					
	121 World Geography							SB				G	
	141 Introduction to Economic Geography							SB				G	
	240 Introduction to Southeast Asia (Cross-listed as ASB/HIS/POS/REL 240)											G	
	253 Introduction to Cultural and Historical Geography							SB				G	
	322 Geography of US and Canada							SB			C		
	323 Geography of Latin America							SB				G	
	325 Geography of Europe							SB				G	
	326 Geography of Asia							SB				G	
	327 Geography of Africa							SB				G	
	328 Geography of Middle East and North Africa							SB				G	
	332 Geography of Australia and Oceania							SB				G	
	344 Geography of Hispanic Americans							SB			C		
	350 The Geography of World Crises							SB				G	



General Studies Courses (continued)

		L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
	351 Population Geography							SB				G	
	352 Political Geography							SB				G	
	357 Social Geography							SB					
	359 Cities of the World I											G	
	360 Cities of the World II											G	
	361 Urban Geography							SB					
	364 Geography of Energy											G	
	421 Geography of Arizona and Southwestern United States							SB			C		
	423 Geography of South America							SB				G	
	424 Geography of Mexico and Middle America							SB				G	
	425 Geography of Mexican American Borderland		L2					SB				G	
	426 Geography of Russia and Surroundings							SB				G	
	442 Geographical Analysis of Transportation							SB					
	455 Historical Geography of U.S. and Canada												H
	495 Quantitative Methods in Geography				N2								
	496 Geographic Research Methods		L2										
GER	201 Intermediate German											G	
	202 Intermediate German											G	
	311 German Conversation											G	
	312 German Conversation											G	
	313 German Composition											G	
	319 Business Correspondence and Communication											G	
	411 Advanced Grammar and Conversation											G	
	412 Advanced Grammar and Composition											G	
	415 German Civilization						HU						H
	416 German Civilization						HU						H
	421 German Literature						HU						
	422 German Literature		L2				HU						
	453 German Literary Masterpieces on Film						HU					G	H
GLG	101 Introduction to Geology I (Physical) (Both GLG 101 and 103 must be taken to secure S1 or S2 credit)								S1	S2		G	
	102 Introduction to Geology II (Historical) (Both GLG 102 and 104 must be taken to secure S2 credit)									S2			H
	103 Introduction to Geology I Laboratory (Both GLG 101 and 103 must be taken to secure S1 or S2 credit)								S1	S2			
	104 Introduction to Geology II Laboratory (Both GLG 102 and 104 must be taken to secure S2 credit)									S2			
	105 Introduction to Planetary Science									S2			
	110 Environmental Geology (Both GLG 110 and 111 must be taken to secure S2 credit)									S2		G	
	111 Environmental Geology Laboratory (Both GLG 110 and 111 must be taken to secure S2 credit)									S2			
	450 Geology Field Camp		L2										
GPH	111 Introduction to Physical Geography								S1	S2			
	210 Society and Environment											G	
	211 Landform Processes		L1										
	212 Introduction to Meteorology I (Both GPH 212 and 214 must be taken to secure S2 credit)									S2			
	214 Introduction to Meteorology Laboratory I (Both GPH 212 and 214 must be taken to secure S2 credit)									S2			
	418 Landforms of the Western United States		L2										
	433 Alpine and Arctic Environments											G	
	471 Geographic Information Systems					N3							
GRA	318 History of Graphic Design						HU						
	345 Design Rhetoric		L2										
GRK	301 Ancient Greek Literature						HU						
	302 Ancient Greek Literature						HU						

## General Studies Courses (continued)

	L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
HEB 201 Intermediate Modern Hebrew											G	
202 Intermediate Modern Hebrew											G	
375 Contemporary Culture of Israel						HU					G	
HIS 100 Western Civilization							SB					H
101 Western Civilization							SB					H
102 Western Civilization							SB				G	H
103 The United States							SB					H
104 The United States							SB					H
107 Introduction to Japan							SB				G	H
111 Global History Since 1500											G	H
201 Introduction to Slavic Civilization		L1					SB					H
230 American Social History		L1										H
240 Introduction to Southeast Asia (Cross listed as ASB/GCU/POS/REL 240)											G	
270 Judaism in American History							SB					H
273 American Military History							SB					H
300 Historical Inquiry		L1					SB					H
302 Film as History						HU						
303 American Cultural History							SB					H
304 American Cultural History							SB					H
305 Asian Civilizations							SB				G	H
306 Asian Civilizations							SB				G	H
308 Modern Southeast Asia							SB				G	H
312 Interpreting China's Classics (Cross listed as HUM 312)		L2				HU						H
320 Ancient Greece							SB					H
321 Rome							SB					H
322 The Middle Ages							SB					H
323 The Middle Ages							SB					H
324 Renaissance		L2					SB					H
325 Reformation		L2					SB					H
326 Early Modern Europe							SB					H
327 Early Modern Europe							SB					H
329 19th-Century Europe							SB					H
330 19th-Century Europe							SB					H
331 20th-Century Europe							SB				G	H
332 Europe Since 1945							SB				G	H
340 Witchcraft and Heresy in Europe (Cross-listed as REL 374)		L2										H
343 Sex and Society in Modern Europe		L2					SB					H
344 Women and Society in Europe		L2				HU	SB					H
351 England							SB					H
352 England							SB					H
357 19th-Century West							SB					H
358 The West in the 20th Century							SB					H
360 American Indian History to 1900							SB			C		H
361 American Indian History Since 1900							SB			C		H
363 African American History I (Cross-listed as AFS 363)							SB			C		H
364 African American History II (Cross-listed as AFS 364)							SB			C		H
365 Islamic Civilization						HU						H
366 The Modern Middle East							SB				G	H
369 Exploration and Empire		L2										H
370 Women in U.S. History, 1600-1880							SB			C		H
371 Women in U.S. History, 1880-1980							SB			C		H
373 Women in 20th-Century West										C		H
380 History of the Mexican American							SB					H



## General Studies Courses (continued)

		L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
	498 PS History Pro Seminar		L2										
HON	171 The Human Event		L1				HU						H
	172 The Human Event		L1				HU						H
HPS	322 History of Science						HU						H
	323 History of Science						HU						H
	330 History of Biology Conflicts and Controversies Cross listed as BIO 316												H
	331 History of Medicine Cross listed as BIO 318												H
	410 Professional Values in Science Cross listed as BIO 416		L2										
HUM	110 Contemporary Issues in Humanities						HU						
	200 Encounter with the Humanities						HU						
	301 Humanities in the Western World		L1				HU						H
	302 Humanities in the Western World		L1				HU						H
	310 Japanese Cities and Cultures to 1800 Cross listed as REL 355		L1				HU						H
	312 Interpreting China's Classics Cross listed as HIS 312		L1				HU						H
	320 Hispanic Cultures Europe and the Americas		L1				HU						H
	340 Contemporary American Film and Popular Culture						HU						
	401 The Culture and Legacy of the European Enlightenment						HU						H
	420 Interpreting Latin America						HU					G	H
	440 Los Angeles and Cultural Theory		L1				HU				C		
	450 Technology and Culture		L1				HU						
	460 Postmodern Culture and Interpretation		L2										
	462 Psychoanalysis and Culture		L2				HU	SB					
	465 Narrative in the Human Sciences		L2				HU						
	498 PS: Humanities		L2				HU						
IBS	300 Principles of International Business											G	
	306 Survey of International Economics Cross listed as ECN 306							SB				G	
	400 Cultural Factors in International Business										C	G	
IDN	201 Intermediate Indonesian I											G	
	202 Intermediate Indonesian II											G	
IED	41 History of American Indian Education												H
IEE	305 Information Systems Engineering					N3							
	374 Quality Control				N2								
	463 Computer Aided Manufacturing and Control					N3							
	475 Simulating Stochastic Systems					N3							
	476 Operations Research Techniques/Applications				N2								
IND	316 21st Century Design I						HU						H
	317 20th Century Design II						HU						H
	470 Professional Practice for Industrial Design		L2										
INT	223 Interior Design Issues and Theories						HU						
	310 History of Interior Design I						HU						H
	311 History of Interior Design II						HU						H
	412 History of Decorative Arts in Interiors						HU						
	442 Specifications and Documents for Interiors		L2										
ITA	20 Intermediate Italian											G	
	202 Intermediate Italian											G	
	311 Italian Composition and Conversation											G	
	312 Italian Composition and Conversation											G	
	314 Advanced Italian											G	
	325 Introduction to Italian Literature						HU						
	415 Italian Civilization		L2				HU						G



## General Studies Courses (continued)

		L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
	274			N1									
	290			N1									
	300		L2										
	419				N2								
	421					N3							
	423					N3							
	425					N3							
	427					N3							
	451				N2								
MCE	446										C		
MCO	110							SB					
	120							SB					
	402		L2										
	418							SB					H
	430											G	
	450						HU						
	456							SB					
	460										C		
MET	416					N3							
MGT	463		L2										
MHL	201					N3							
	344						HU					G	
	352												H
	438												H
	439		L2										H
	441		L2										H
	447		L2										
	466		L2				HU				C		
MIC	205									S2			
	206									S2			
	302		L2										
	401		L2										
MIS	410							SB					
	412							SB					
	414							SB					
	416							SB					
MKT	460		L2										
MUE	381		L2										
MUS	340						HU						H
	347						HU						
	353						HU						
	354						HU						
	355						HU						H
	356						HU						
NUR	306		L1										
	403		L2										
PGS	101							SB					
	222							SB					
	270							SB					
	304		L1										
	306							SB					

General Studies Courses (continued)

	L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
315							SB					
341							SB					
344		L2										
350							SB					
351		L2					SB					
365							SB					
414		L2					SB					
427		L2					SB					
441		L2					SB					
443		L2					SB					
444		L2										
445							SB					
446		L2										
450		L2										
451		L2										
452		L2										
461							SB					
463		L2										
465		L2										
466							SB					
467		L2										
PHI. 101						HU						
103	L1					HU						
301						HU						H
302						HU						H
304						HU						
305						HU						
306						HU						
307						HU						
308						HU						
309						HU						
310						HU						
311						HU						
312						HU						
314						HU						
315						HU						
316						HU						
317						HU						
318						HU						
319					N3	HU						
325						HU	SB					
332						HU						
335						HU						
350		L2										
402						HU						
403						HU						
PHS 110								S1	S2			
208								S1	S2			
(Cross-listed as STE 208)												
PHY 101								S1	S2			
111								S1	S2			
(Both PHY 111 and 113 must be taken to secure S1 or S2 credit)												
112								S1	S2			
(Both PHY 112 and 114 must be taken to secure S1 or S2 credit)												
113								S1	S2			
(Both PHY 111 and 113 must be taken to secure S1 or S2 credit)												
114								S1	S2			
(Both PHY 112 and 114 must be taken to secure S1 or S2 credit)												

## General Studies Courses (continued)

		L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
	121 University Physics I: Mechanics (Both PHY 121 and 122 must be taken to secure S1 or S2 credit)								S1	S2			
	122 University Physics Laboratory I (Both PHY 121 and 122 must be taken to secure S1 or S2 credit)								S1	S2			
	131 University Physics II: Electricity and Magnetism (Both PHY 131 and 132 must be taken to secure S1 or S2 credit)								S1	S2			
	132 University Physics Laboratory II (Both PHY 131 and 132 must be taken to secure S1 or S2 credit)								S1	S2			
	150 Physics I								S1	S2			
	151 Physics II								S1	S2			
	252 Physics III								S1	S2			
	42 Research Paper		L2										
PLA	310 History of Landscape Architecture (Cross listed as APH 411)												H
	420 Theory of Urban Design						HU						
PLB	108 Concepts in Plant Biology								S1	S2			
	260 Plants in Cities. Introduction to Urban Horticulture									S2			
	300 Comparative Plant Diversity		L2							S2			
	320 Environmental Science (Nonmajor) (Cross listed as BIO 319)											G	
	414 Plant Pathology		L2										
	432 Computer Applications in Biology (Cross listed as BIO 406)					N3							
POR	201 Intermediate Portuguese											G	
	313 Portuguese Composition and Conversation											G	
	314 Portuguese Composition and Conversation											G	
	321 Luso-Brazilian Literature						HU						
	472 Luso-Brazilian Civilization						HU					G	
POS	101 Political Ideologies							SB					
	110 Government and Politics							SB					
	150 Comparative Government							SB				G	
	160 Global Politics							SB				G	
	220 Political Issues and Public Policy							SB					
	230 Current Issues in National Politics		L1					SB					
	240 Introduction to Southeast Asia (Cross listed as ASB GCU/HIS/REL 240)											G	
	260 Current Issues in International Politics		L1					SB				G	
	270 American Legal System							SB					
	301 Empirical Political Inquiry							SB					
	310 American National Government							SB					
	313 The Congress							SB					
	314 The American Presidency							SB					
	315 The Supreme Court							SB					
	316 State and Local Government							SB					
	320 Public Administration							SB					
	325 Public Policy Development							SB					
	331 Public Opinion							SB					
	332 American Political Parties							SB					
	333 Interest Groups							SB					
	336 Electoral Behavior							SB					
	340 History of Political Philosophy I						HU						H
	341 History of Political Philosophy II						HU						H
	346 Problems of Democracy						HU						
	350 Comparative Politics							SB				G	
	355 Russia and Successor Studies							SB				G	
	356 Western Europe							SB				G	
	357 South Asia Politics							SB				G	







General Studies Courses (continued)

	L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
202 Intermediate Russian											G	
211 Basic Russian Conversation											G	
212 Basic Russian Conversation											G	
311 Russian Composition and Conversation											G	
312 Russian Composition and Conversation											G	
321 Survey of Russian Literature		L2				HU						H
322 Survey of Russian Literature		L2				HU						
323 Survey of Literature of the Soviet Era		L2				HU					G	
411 Advanced Composition and Conversation I											G	
412 Advanced Composition and Conversation II											G	
420 Russian Poetry		L2				HU						
421 Pushkin		L2				HU						
423 Dostoyevsky		L2				HU						
424 Tolstoy		L2				HU						
425 Chekhov		L2				HU						
426 Literatures of the Nationalities of the Former Soviet Union		L2				HU					G	
430 Russian Short Story		L2				HU						
441 Survey of Russian Culture		L2				HU					G	H
SCM 455 Research and Negotiation		L2										
SHS 367 Language Science							SB					
465 Speech and Language Acquisition							SB					
SOC 101 Introductory Sociology							SB					
301 Principles of Sociology							SB					
312 Sociology of Adolescence							SB					
315 Courtship and Marriage							SB					
318 Overview of Aging							SB					
321 Sociology of Work							SB					
331 Environmental Sociology							SB					
332 Urban Sociology							SB				G	
333 Population							SB				G	
340 Sociology of Deviant Behavior							SB					
341 Modern Social Problems							SB					
352 Social Change							SB				G	H
360 Sociological Psychology							SB					
361 Variant Sexuality							SB					
365 The Sociology of Mass Communication							SB					
390 Social Statistics I					N2							
391 Sociological Research							SB					
415 The Family							SB					
416 Marriage Problems in Contemporary Society		L2					SB					
417 Family Violence							SB					
418 Aging and the Life Course							SB					
420 Sociology of Religion		L2					SB					
422 Sociology of Complex Organizations		L2					SB					
423 Social Class and Stratification		L2					SB					
424 Politics of Women's Health		L2										
427 Sociology of Health and Illness		L2					SB					
429 Sociology of Law							SB					
433 Demographic Methods							SB					
446 Sociology of Crime							SB					
451 Comparative Sociology							SB				G	
455 Social Movements							SB					
456 Political Sociology							SB				G	
464 Women's Roles		L2					SB			C		
470 Racial and Ethnic Minorities							SB					
474 Afro-American in Modern Society		L2					SB			C		
483 History of Social Thought		L2					SB					
485 Sociology of Knowledge		L2					SB					

## General Studies Courses (continued)

		L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
	486 Contemporary Theory							SB					
SPA	201 Intermediate Spanish											G	
	202 Intermediate Spanish											G	
	203 Intermediate Spanish for Bilinguals											G	
	204 Intermediate Spanish for Bilinguals											G	
	207 Spanish for International Professions II											G	
	313 Spanish Conversation and Composition											G	
	314 Spanish Conversation and Composition											G	
	319 Business Correspondence and Communication											G	
	325 Introduction to Hispanic Literature						HU					G	
	412 Advanced Conversation and Composition											G	
	413 Advanced Spanish Grammar											G	
	420 Applied Spanish Linguistics		L2										
	421 Spanish in the Southwest		L2					SB			C		
	425 Spanish Literature						HU						
	426 Spanish Literature						HU						
	427 Spanish American Literature		L2										
	428 Spanish American Literature		L2									G	
	464 Mexican American Literature						HU						
	471 Civilization of the Spanish Southwest						HU						
	472 Spanish American Civilization						HU					G	H
	473 Spanish Civilization						HU	SB				G	
SPE	311 Orientation to Education of Exceptional Children							SB					
SPF	301 Culture and Schooling		L2										
STE	201 Introduction to Bioengineering (Cross-listed as BME 201)	L1											
	208 Patterns in Nature (Cross-listed as PHS 208)								S1	S2			
STP	226 Elements of Statistics				N2								
	326 Intermediate Probability				N2								
	420 Introductory Applied Statistics				N2								
	429 Experimental Statistics					N3							
SWU	271 Introduction to Social Work												H
	301 Human Behavior in the Social Environment I		L2					SB					
	321 Statistics for Social Workers				N2								
	340 Human Behavior in the Social Environment II							SB					
	374 Diversity and Oppression in a Social Work Context										C		
TCM	201 Radio-Television Writing	L1											
	315 Broadcast News Reporting		L2										
THA	201 Intermediate Thai I											G	
	202 Intermediate Thai II											G	
THE	100 Introduction to Theatre						HU						
	220 Principles of Dramatic Analysis	L1											
	300 Film: The Creative Process						HU						
	320 History of the Theatre I						HU						H
	321 History of the Theatre II						HU						H
	322 History of the Theatre III						HU						H
	401 Focus on Multiethnic Film						HU				C		
	420 History of the American Theatre						HU						H
	421 History of the English Theatre		L2				HU						
	425 History of Asian Theatre		L2				HU						
TWC	200 Impact of Communications Technology on Society	L1											
	400 Technical Communications		L2										
VTN	201 Intermediate Vietnamese I											G	
	202 Intermediate Vietnamese II											G	
WSH	413 Lesbian Culture: Images and Realities						HU				C		

General Studies Courses (continued)

	L1	L2	N1	N2	N3	HU	SB	S1	S2	C	G	H
464						HU				C		
470						HU				C		
WST 100							SB			C		
300							SB			C		
373							SB			C		
375										C		
377	L1									C		
378	L1									C		
380							SB			C		
457							SB				G	
460							SB			C		
498		L2										



African drumming was one of many presentations during the Graduate College 60th anniversary celebration. Tim Trumble photo

# Minors, Certificates, and Interdisciplinary Studies

Interdisciplinary studies are available to students through an interdisciplinary degree, the Bachelor of Interdisciplinary Studies, or an extensive choice of minors or certificates that may be taken in conjunction with other majors. Since interdisciplinary studies provide skills that support employment in a rapidly changing work place, students are encouraged to consider these options. Consult the academic advisor in your major about the impact of enrolling in a minor or certificate program.

## Minors

A minor is an approved, coherent concentration of academic study in a single discipline, involving substantially fewer hours of credit than the corresponding major. Several ASU colleges offer undergraduate minors in addition to majors; see the "Minors" table. For more information about specific minors offered at ASU, refer to the individual college and department descriptions in this catalog.

Students in most majors may pursue one or more minors and, upon successful completion of the prescribed course work, have that accomplishment officially recognized on the ASU transcript at graduation if (1) the college department of the minor officially certifies, through established verification procedures, that all requirements for the minor have been met, and (2) the college (and, in certain colleges, the department of the student's major allows the official recognition of the minor.

A student wishing to pursue a specific minor should consult an academic advisor in the unit offering that minor to ensure that an appropriate set of courses is taken.

*Note:* Certain major and minor combinations may be deemed inappropriate either by the college or department of the major or minor. Inappropriate combinations include (but would not be limited to) ones in which an excessive number of courses in the minor are simultaneously being used to fulfill requirements of the student's major.

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Sociology	426
Spanish	383
Women's Studies	432
<b>College of Public Programs</b>	
Communication	449
Justice Studies	458
Mass Communication	455
Recreation Management †	463
Tourism	463
<b>Interdisciplinary Programs</b>	
Gerontology	111

Applications are not being accepted at this time.

## Certificates

Students may pursue some certificate programs along with a major and other certificate programs independently. For more information, refer to the pages indicated in the "Certificates" table, page 111, and "ASU West Certificates," page 581.

**Certificates**

Certificate	Page
African American Studies	336
American Humanities, Certificate in Youth Agency Administration	463
American Indian Justice Studies	458
Asian Studies	331
Computer Technology	255
East Asian Studies	331
Gerontology	111
Hazardous Materials and Waste Management	562
Health Physics	331
Human Performance Improvement	255
Indian Law	447
International Business Studies	154
Jewish Studies	331
Latin American Studies	332
Medieval and Renaissance Studies	332
Medieval Studies <sup>1</sup>	
Museum Studies <sup>1</sup> - <sup>3</sup>	
Nonprofit Management	255
Post Master's Family Nurse Practitioner <sup>1</sup>	255
Quality Analysis	154
Renaissance Studies <sup>1</sup>	
Russian and East European Studies	332
Scholarly Publishing <sup>1</sup> -	
Scandinavian Studies	332
Small Business and Entrepreneurship	154
Southeast Asian Studies	332
Translation	383
Transportation Systems <sup>1</sup> -	
Women's Studies	432
Writing	355

<sup>1</sup> This certificate program is not available as a B.I.S. concentration.

<sup>2</sup> For more information, see the *Graduate Catalog*.

<sup>3</sup> For more information, contact the Department of Anthropology.

**Concurrent and Dual Degrees**

Graduate students have the opportunity to pursue more than one degree at the same time as part of an organized program. For more information, see the *Graduate Catalog*.

**Interdisciplinary Studies**

**Asian Studies.** See "Asian Studies," page 331, for information about the Certificate in Asian Studies.

**Bachelor of Interdisciplinary Studies.** See "Bachelor of Interdisciplinary Studies" page 114, for information about this major.

**Energy Studies.** An expanding instructional and research involvement in energy matters exists through the following three curricular paths:

1. general studies, which emphasize energy as an elective beyond the scope of a chosen major (for more information, contact M.J. Pasqualetti, 480/965 4548),
2. specific studies in the College of Architecture and Environmental Design, for those pursuing the Master of

Architecture degree and the Master of Science degree in Building Design; and

3. specific studies in the College of Engineering and Applied Sciences, usually for those seeking a degree in a branch of engineering

**Environmental Studies.** The Center for Environmental Studies encourages and coordinates interdisciplinary environment related activities in the natural and social sciences within the university. The center sponsors special courses, conferences, and workshops on environmental topics. Drawing from faculty and students throughout the university, the center participates in research and community programs relating to environmental problem areas. It does not formally offer courses or a degree program. For more information, see "Center for Environmental Studies," page 39, or call 480/965 2975.

**Film Studies.** The Film Studies Program exists not only to provide information and experience but also to serve as a means of creative expression for the student and as a useful subject and tool in teaching. The program is not designed to produce professional filmmakers, but it may provide practical preparation for students desiring further film study in other institutions.

Inquiries about this program should be directed to the Film Studies coordinator, Jay Boyer, at 480 965 7644

**Gerontology.** The Gerontology Program brings together faculty from several disciplines to teach courses related to adult development and aging, to collaborate on gerontological research, and to participate in projects of service to older adults.

A certificate at the postbaccalaureate level and an undergraduate minor are available in Gerontology. The certificate consists of 24 semester hours—12 hours of required and 12 hours of elective course work. The minor consists of 18 semester hours—six hours of required and 12 hours of elective course work. Courses related to aging are taught throughout the university by faculty who are active contributors to research, theory, and public policy and practice. In addition, gerontology provides students with opportunities to gain practical experience in working with elderly people. A practicum, held at the Veterans Administration Hospital, is available to students who have completed some gerontology course work. Gerontology also helps students find rewarding internships in community programs for older adults. For more information, see "Gerontology Certificate Program," page 255, and "Gerontology," page 303, refer to the current *Student Handbook in Gerontology*, or call 480 965 3225.

**Islamic Studies.** The art, history, geography, and religion of the Islamic world are the subjects of several courses offered by departments in the College of Fine Arts and the College of Liberal Arts and Sciences. For information, call Dr. Mark Woodward, Department of Religious Studies at 480 965 7145

**Linguistics.** Linguistics concentrations are offered in master's degree programs in the Departments of Anthropology, English, and Languages and Literatures through the Graduate College. Numerous linguistics courses are offered in these and other departments. For information, call Dr. Dawn

Bates of the University Committee on Linguistics, at 480/965-3168.

**Medieval and Renaissance Studies.** An undergraduate Certificate in Medieval and Renaissance Studies is offered by the Arizona Center for Medieval and Renaissance Studies. See "Medieval and Renaissance Studies," page 332, for more information. See the *Graduate Catalog* for information about the Certificate in Medieval Studies and the Certificate in Renaissance Studies. See the "Arizona Center for Medieval and Renaissance Studies," page 36, for information about the center.

**Southeast Asian Studies.** See "Southeast Asian Studies," page 332, for information about the Certificate in Southeast Asian Studies.

**Transportation Systems.** See the *Graduate Catalog* for information on the Certificate in Transportation Systems.

**Women's Studies.** See "Women's Studies," page 333, for information about the Certificate in Women's Studies.

### MILITARY OFFICER TRAINING

U.S. Air Force and U.S. Army ROTC units are active on the ASU campus. See "Department of Aerospace Studies" and "Department of Military Science," pages 333 and 402, for more information.

**Defense Activity for Non-Traditional Education Support (DANTES).** ASU is a participating institution with DANTES and is listed in the DANTES Directory of Independent Study. DANTES is an executive agency of the Department of Defense that provides educational support for the voluntary education programs of all services. The primary missions of DANTES are (1) to provide nationally recognized examination and certification programs as part of the voluntary education programs of military services and (2) to facilitate the availability of high-quality independent institutions for service men and women.

### WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION (WICHE)

For Arizona residents who wish to attend professional schools of dentistry, veterinary medicine, occupational therapy, optometry, and osteopathy in one of the other western states, Arizona has joined with the other western states to create the Western Interstate Commission for Higher Education. Through WICHE, qualified Arizona residents may attend schools in other western states at essentially the same expense to the students as to residents of the state in which the school is located. Students must have maintained at least average grades in their preprofessional work and must have been legal residents of Arizona for at least the last five years. Recipients are required to return to Arizona to practice or to repay a portion of the funds expended in their behalf.

For applications and more information, call 480/965-2365.



Students conducting air quality research

Tim Trumble photo



# Division of Undergraduate Academic Services

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The Division of Undergraduate Academic Services is a primary source of academic support for students, faculty, and staff. The division coordinates and offers academic programs and services designed to enhance the academic experience of ASU undergraduate students. The goals of the division are to play a major role in student retention, provide students the support necessary for successful completion of their first year and beyond, and offer students learning experiences that complement those provided by other academic units.

The division includes Education Support Services, Bachelor of Interdisciplinary Studies, Advising Services, and General Studies.

## EDUCATION SUPPORT SERVICES

This unit provides university wide teaching and learning support to students and faculty in defined academic areas. For more information, call 480 965 3097.

### Campus Match

Campus Match is a first semester fall program that gives freshmen the opportunity to attend classes in small learning communities according to their academic interest. Students choose a "cluster" of classes from a wide variety of cluster offerings. Each cluster is limited to 25 students who enroll in and attend classes together. All students attend a weekly one hour peer led seminar that facilitates their social as well as academic adjustment to the university.

### University Success Courses

The purpose of the UNI courses is to assist first year, transfer, and re entry students in making a successful transition to the university. Students learn university resources, policies and procedures, study skills, values and goal setting, human diversity, academic and career planning, and other skills.

## UNIVERSITY (UNI)

**UNI 100 Academic Success at the University.** 3 F S SS  
Orientation to campus resources, study skills, and other academic and social issues for college students. Introduction to an understanding of human diversity, values, and perspectives as they relate to student success. Lecture/seminar/discussion. Prerequisite: freshman or sophomore or transfer student standing.

**UNI 101 Student Success Seminar.** 1 F S SS  
Understanding human diversity, perspectives, and values as they relate to student success. Orientation to ASU resources, study skills, and academic and social issues for students. Seminar/discussion.

## Supplemental Instruction

Supplemental Instruction (SI) works to improve student performance and increase retention in historically difficult courses (those with high rates of D, E, and W grades). An SI leader attends class and offers voluntary study sessions to all students enrolled in the class. During the study sessions, students work together to learn course content and to enhance study skills.

## Summer Bridge

Summer Bridge is a program designed to assist first semester freshmen in making the transition from high school to university life. Summer Bridge is a five week, residential program that provides a full academic curriculum in conjunction with a rich residence hall experience. The program assists participants in acclimating to campus, accessing student support programs and services, and enhancing classroom skills.

## Service Learning Project

The Service Learning Project uses community service to enhance education. The project is based on the concept of reciprocal learning. Service Learning sections of regular courses are linked to credit bearing internships where students apply what they are learning in the community to their course work.

For example, English composition students contribute one on one homework tutoring, reading development, educational enrichment workshops, and learning readiness programs for children and youth for six hours per week during a semester. In turn, their community experiences and research form the basis of the tutors' classroom research and papers. ASU students are required to prepare personalized lesson plans for every tutoring session.

Students in a Service Learning Plant Biology course for nonmajors are teaching Julian Middle School and Salt River Elementary School fifth grade students simplified versions of the science concepts they are learning themselves.

Students in a 100 level Physical Geography course partner with sixth grade students at the Salt River Elementary School to share their knowledge of the physical environment.

All one on one tutoring is done in an after school environment at partner agencies and schools, while the sciences have been written into the core curriculum of four of the partner schools.

Students may enroll in the internships with previous or current enrollment in one of the following linked courses.

## Linked Courses

### Composition and Linguistics Courses

ENG 02 First Year Composition	3
ENG 217 Writing Reflective Essays <i>LI</i>	3
ENG 301 Writing for the Professions <i>LI</i>	3
ENG 312 English in Its Social Setting <i>HL/SB</i>	3

See ENG course listings for more details.

### Sciences and Additional Courses

GLG 101 Introduction to Geology I <i>SI/S2, G</i>	3
GLG 103 Introduction to Geology I Laboratory <i>SI/S2</i>	1
GPH 111 Introduction to Physical Geography <i>SI/S2</i>	4
MTE 180 Theory of Elementary Mathematics	3
PHS 208 Patterns in Nature <i>SI/S2</i>	4
PLB 108 Concept in Plant Biology <i>SI/S2</i>	4

See appropriate course listings for more details.

### INTERNSHIPS

#### ENG 484 Composition Internship. 3) F S

Links courses with internships which involve tutoring children after-school programs in the community and assisting them with reading, homework and computer skills. Three afternoons a week from 3:00 p.m. to 5:00 p.m. Monday through Thursday

#### GLG 484 Geology Internship. 3) F S

Assist teaching fifth grade students as members of GLG 103 using hands-on activities

#### GPH 484 Geography Internship. 3) F S

Assist teaching sixth grade students as members of GPH 111 using hands-on activities

#### MTE 484 Theory of Elementary Mathematics Internship. 3) F S

Employ hands-on activities and manipulatives to advance mathematical understanding in second to fourth grade students

#### NUR 484 Nursing Internship. (3) F S

Plan and conduct health issues workshops for secondary school students at Desert Eagle School

#### PHS 484 Patterns in Nature Internship. 3) F S

Teach middle school students scientific concepts discussed and demonstrated in PHS 208. Hands on experiences the focus of the teaching

#### PLB 498 PS: Science Internship. 3) F, S

Teach fifth-grade children as members of PLB 108 by planting gardens and conducting indoor plant experiments

#### UNI 494 ST: Science is Magic Internship. 3) F S

Present science demonstrations to K-8 children at the schools. Interns will be trained by personnel from the Center of Solid State Science. This internship does not follow the format of the others

### Writing Across the Curriculum (WAC)

**Curriculum Development and Support.** WAC Curriculum Development and Support is designed to assist in enhancing the quality of writing and critical thinking skills of university students.

WAC specialists consult with faculty on methods of developing and integrating writing assignments into course content. They also provide customized in-class writing workshops designed to assist students in researching and responding to writing assignments.

**Writing Center.** The Writing Center is a service that provides students with one-on-one and group tutoring in writing skills. Rather than proofreading or editing students' writing, the Writing Center teaches students the skills they need to improve their writing process and product.

### BACHELOR OF INTERDISCIPLINARY STUDIES

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 vocational 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 based on approved academic minors and certificate programs and should represent academic interests that the student wishes to integrate into a meaningful program.

Students, other than entering freshmen, must contact Cross-college Advising Services (CAS) in UASB 131, 480/965-4464, to attend an informational session conducted by an academic advisor before declaring the B.I.S. major.

The combination of areas of concentration gives students greater flexibility in creating a unique program to accomplish individualized academic goals. Combinations created by current students illustrate a range of examples:

1. American Humanities Certificate Program and Theatre
2. Business and Communication
3. Business and Environmental Resources
4. Communication and Sociology
5. Dance and Exercise Science
6. Economics and Spanish
7. Environmental Resources and Geology
8. Justice Studies and Political Science
9. Psychology and Women's Studies
10. Religious Studies and Anthropology

### Basic Requirements

The B.I.S. requires 120 semester hours. The major is composed of a 12-hour core and a minimum of 36 semester 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.

#### Core Courses

BIS 301 Foundations of Interdisciplinary Studies L1	3
BIS 302 Interdisciplinary Studies	3
BIS 401 Applied Interdisciplinary Studies	3
BIS 402 Senior Seminar L2	3
Total	12

### Other Requirements

In addition to the basic requirements, students must complete all university requirements, including English Composition and General Studies. Early advising is recommended to facilitate selecting courses that may apply to both the General Studies requirements and the areas of concentration.

**Declaring the B.I.S. Major.** Academic advising from Cross-college Advising Services is required before being approved to declare the B.I.S. In addition, the following requirements must be completed by the end of the semester of the request:

1. 45 semester hours of college credit,
2. cumulative G.P.A. of 2.00; 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 in each area

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

### Approved Concentrations

Each concentration requires 18 semester hours, of which 12 hours must be at the upper division. They are based on existing minors or certificate programs (see colleges for specific minors or certificate programs). Concentrations based on minors with fewer than 18 hours have additional semester hours required. Complete information on each concentration is available in CAS, UASB 131.

See the "Minors" table page 110, and "Certificates" table, page 111, and the sections of the specific colleges involved.

#### **BACHELOR OF INTERDISCIPLINARY STUDIES (BIS)**

**BIS 301 Foundations of Interdisciplinary Studies.** (3) F, S, SS  
Analysis of 21st-century workplace, introduction of critical thinking skills, interdisciplinary methods. Includes autobiographical self-study and education plan. Lecture, seminar, discussion. Prerequisite: B.I.S. major. *General Studies: L1.*

**BIS 302 Interdisciplinary Studies.** (3) F, S, SS  
Development of general learning skills and interdisciplinary thinking. Lecture, seminar, discussion. Prerequisite: BIS 301.

**BIS 401 Applied Interdisciplinary Studies.** (3) F, S, SS  
Students propose a set of learning outcomes that may require a service learning project, independent research, senior thesis, or practicum. Prerequisite: BIS 301.

**BIS 402 Senior Seminar.** (3) F, S, SS  
Capstone course will help students integrate their classroom and experiential learning. Lecture, seminar, discussion. Prerequisites: BIS 301, 302, 401. *General Studies: L2.*

#### **ADVISING SERVICES**

##### **Cross-College Advising Services**

Cross-college Advising Services ([CAS] UASB 129, 480/965-4464), is a central advising, referral, and information facility whose staff is available to assist students in their academic careers at ASU. Emphasis is placed on advising

services to first-time, prospective, transfer, and visiting students and students in transition, such as those changing majors and those without majors. In addition to guidance in the exploration or selection of a major, CAS provides general academic information and referrals to all areas of student academic support.

##### **Degree Audit Reporting System (DARS)**

DARS is an online tool that provides students with consistent, accurate information regarding their academic requirements. Through this system, a degree audit is produced that matches a student's completed courses against degree program requirements in a matter of seconds. The audit allows students to assess their progress toward their degree or to determine how their earned credits would apply if they were to pursue another degree program. Audits may be obtained from the student's academic advisor.

#### **GENERAL STUDIES**

All students enrolled in a baccalaureate degree program must satisfy General Studies requirements. For more information, see "University Graduation Requirements," page 81, and "General Studies," page 85.



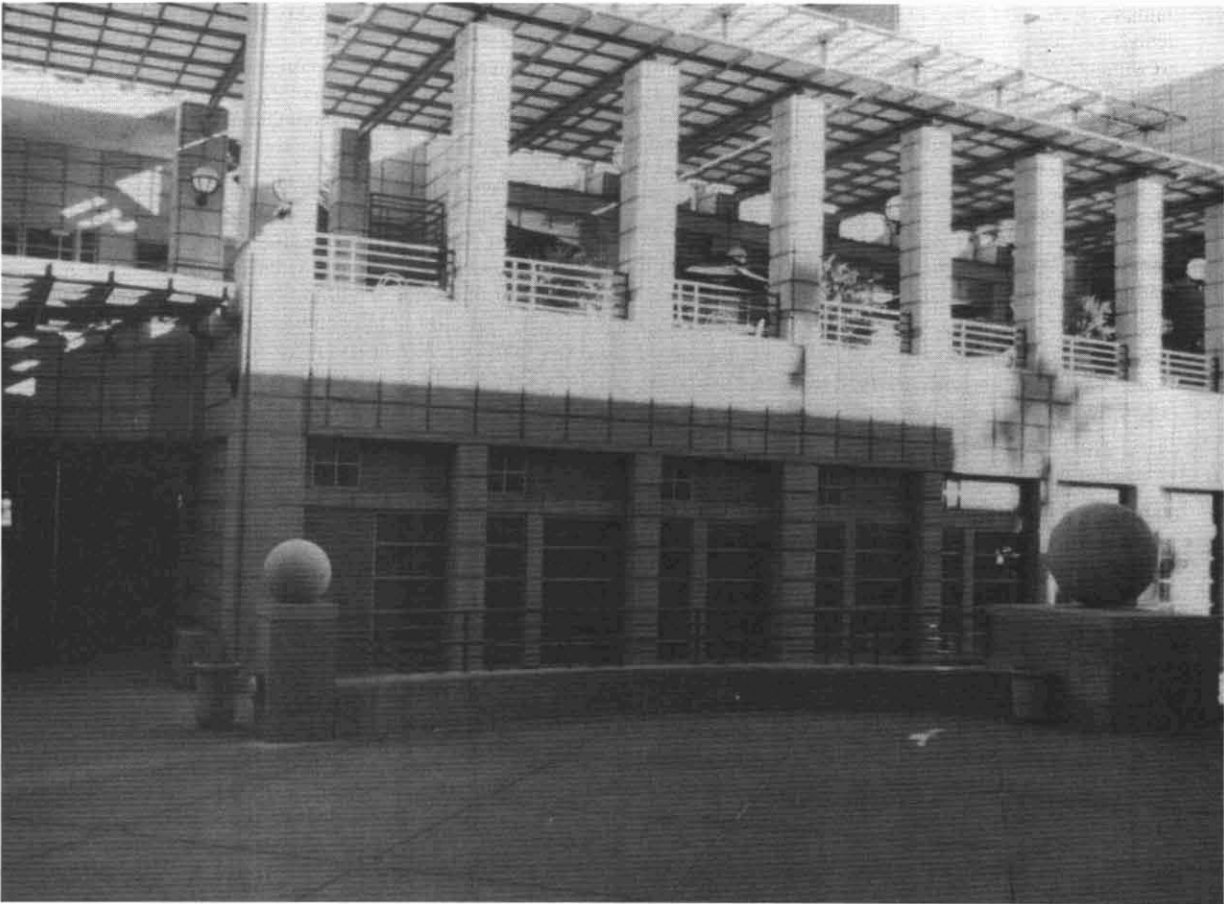
Students demonstrating university pride during ASU Homecoming parade

Tim Trumble photo

# College of Architecture and Environmental Design

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**John Meunier, M.Arch.**  
Dean



College of Architecture and Environmental Design/North Wing

John MacIsaac photo

School of Architecture ..... 121  
School of Design ..... 128

School of Planning  
and Landscape Architecture ..... 137

## PURPOSE

The practice of architecture and environmental design is the culturally responsible shaping of our environment from the scale of the cities in which we live to the buildings and interiors we inhabit and the artifacts and products we use. What we design must be durable, useful, beautiful, appropriate to its context, and not a waste of resources, energy, or materials. Designing our environment is an art, a technology, and a social science that has a history as long as human culture. The goals of the faculty include offering students an education that becomes the basis for life-long growth and improvement as professionals, advancing the discipline in both theory and practice, and improving the quality of the environment by making the expertise and knowledge of the faculty available to other professionals and to the public.

## ORGANIZATION

**Academic Organization.** The college is composed of three academic units:

- School of Architecture
- School of Design
- School of Planning and Landscape Architecture

Administration of the college is the responsibility of the dean, who in turn is responsible to the president of the university through the senior vice president and provost.

**College Facilities.** All the college's programs are housed in a single complex. Facilities include the Architecture and Environmental Design Library, computer laboratories, design studios; the Gallery of Design; lecture and seminar rooms; the Media Center, offices for faculty, the administration, and student organizations, the shop; the slide collection; Materials Resource Center; and technology laboratories. The bridge between the original building and the expansion places the college's review and display space at the heart of the complex.

**Architecture and Environmental Design Library.** As a branch of the University Libraries, the Architecture and Environmental Design Library provides easy access to more than 30,000 books, periodicals, and reference materials for students, faculty, and the professional community. The library's special collections include archives of Blaine Drake, Victor Olgyay, Calvin Straub, Will Bruder, and others, as well as research materials on Paolo Soleri and Frank Lloyd Wright. The Alternative Energy Collection and the Materials Resource Center provide additional sources for research.

**Gallery of Design.** The Gallery of Design is one of eight university galleries and museums. It provides space for traveling exhibitions and exhibitions of student and faculty work.

**Special Facilities.** College programs are supplemented by several special laboratories, including the computer-aided design and graphics lab, the high bay research lab, the lighting lab, the solar research lab, the solar rooftop work area; an extensive shop equipped to handle wood, plastic, and metal, the Herberger Center for Design Excellence, and the Joint Urban Design Program, which also has a studio at the ASU Downtown Center. The Media Center includes traditional graphics and audiovisual equipment as well as portable

gear. The slide collection, with more than 100,000 images, is available for instructional use, and the college maintains an array of materials testing equipment.

## ADMISSION

**Lower-Division Programs.** A new or transfer student who has been admitted to the university and has selected a college major is admitted to the lower division program of his or her choice. A separate application procedure is required for entry to upper division programs and graduate programs. Acceptance into lower division programs does not guarantee acceptance to upper division programs. Acceptance into lower division programs requires a TOEFL score of 500 or higher for international students whose native language is not English.

**Transfer Credits.** While the university accepts credits transferred from other accredited institutions, transfer credits are not applied to specific degree programs until reviewed and accepted by the appropriate academic units. Transfer course work must be equivalent in both content and level of offering. In addition, a review of samples of work (portfolio format) from previous studio classes is required. Students who change majors to transfer into the college or one of its program areas must have a minimum cumulative GPA of 2.50.

**Upper-Division Programs.** Admission to upper division programs is competitive. Consult requirements of each major for details. Students applying to more than one program must make a separate application to each and must submit separate portfolios. Students not enrolled at ASU when they apply to upper division programs must also make a separate application to the university. Students not admitted to the upper division are not dismissed from the university and may reapply or may transfer to other programs. Students who plan to reapply should contact a college academic advisor. Transfers into upper division programs are considered only if vacancies occur, and such transfers are limited to students with equivalent course work who are competitive with continuing students. Acceptance into some upper-division programs requires a TOEFL score of 500 or higher for international students whose native language is not English.

## ADVISING

While the college and its academic units provide academic advising, *it is ultimately the responsibility of each student to fulfill academic and program requirements.* Advising and record keeping for lower division programs are the responsibility of a college academic advisor (located in ARCH 141). Records for upper division program students are kept in the appropriate academic units, and advising is by the faculty and the head of the academic unit. General career advising is available from all faculty members. Administration of program requirements is the responsibility of the head of the academic unit and the dean.

**Appeals Procedures.** Academic appeals and requests for variances are typically made first to the student's advisor and then, if necessary, to the head of the appropriate academic unit, the Governance and Grievance Committee, and, finally, the dean. A student who feels unjustly treated in academic or other matters relating to his or her career as a

### College of Architecture and Environmental Design Baccalaureate Degrees and Majors

Major	Degree	Administered by
Architectural Studies	B.S.D.	School of Architecture
Design Science	B.S.D.	School of Design
Environmental Resources	B.S.	School of Planning and Landscape Architecture
Concentration: natural resource management		
Graphic Design	B.S.D.	School of Design
Housing and Urban Development	B.S.D.	School of Planning and Landscape Architecture
Industrial Design	B.S.D.	School of Design
Interior Design	B.S.D.	School of Design
Landscape Architecture	B.S.L.A.	School of Planning and Landscape Architecture
Urban Planning	B.S.P.	School of Planning and Landscape Architecture

Applications for this program are not being accepted at this time.

This major requires more than 120 semester hours to complete.

student may contact a college academic advisor or may take the grievance to the college ombudsperson.

#### DEGREES

**Undergraduate.** The college offers curricula for four or five year degree programs: the Bachelor of Science in Design (B.S.D.) degree in Architectural Studies, Graphic Design, Housing and Urban Development, Industrial Design, and Interior Design; the B.S. degree in Environmental Resources; the Bachelor of Science in Landscape Architecture (B.S.L.A.) degree; and the Bachelor of Science in Planning degree. Applications for the B.S.D. degree in Design Science are not being accepted at this time. For more information, see the "College of Architecture and Environmental Design Baccalaureate Degrees and Majors" table.

Each undergraduate program is divided into lower division and upper division programs. Completion of a lower division program does not guarantee advancement to an upper division program.

#### MINORS

The faculty in the School of Planning and Landscape Architecture offer minors in Environmental Resources and Urban Planning. See "Minors," page 138, for more information. The faculty in the School of Design also offer a minor in Interior Design History. See "Minor," page 134, for more information.

#### GRADUATE PROGRAMS

The faculty in the College of Architecture and Environmental Design offer the National Architectural Accrediting Board accredited professional degree Master of Architecture (M.Arch.), Planning Accreditation Board accredited professional degree Master of Environmental Planning (M.E.P.); M.S. degree in Building Design; Master of Science in Design (M.S.D.); M.S. degree in Environmental Resources, and Ph.D. degree in Environmental Design and Planning. For more information, see the "College of Architecture and Environmental Design Graduate Degrees and Majors" table, page 119, and the *Graduate Catalog*.

#### UNIVERSITY GRADUATION REQUIREMENTS

In addition to fulfilling college and major requirements, students seeking a bachelor's degree must meet all univer-

sity graduation requirements. See "University Graduation Requirements," page 51.

#### General Studies Requirement

All students enrolled in a baccalaureate degree program must satisfy a university requirement of a minimum of 35 semester hours of approved course work in General Studies, as described under "General Studies," page 85. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses. General Studies courses are listed in the "General Studies" section, page 87, in the course descriptions, in the *Schedule of Classes* and in the *Summer Sessions Bulletin*.

#### COLLEGE DEGREE REQUIREMENTS

College of Architecture and Environmental Design degree requirements supplement the General Studies requirement. Each curriculum offered by the college includes sufficient approved course work to fulfill the General Studies requirement.

#### MAJOR REQUIREMENTS

Students seeking the Bachelor of Science in Design degree must satisfactorily complete a curriculum of 120 or 150 semester hours, depending on the major. The Bachelor of Science in Planning degree requires 120 semester hours. The Bachelor of Science in Landscape Architecture degree requires 120 semester hours. The B.S. degree in Environmental Resources requires 120 semester hours.

Students majoring in Interior Design must take 150 semester hours. All other majors require 120 hours.

**Special Honors at Graduation.** At the time of graduation, students with academic distinction are awarded the respective designation *cum laude*, *magna cum laude*, or *summa cum laude*. For more information, see "Graduation with Academic Recognition," page 84.

#### ACADEMIC STANDARDS

**Lower-Division Retention Standards.** A student in one of the college's lower division programs is placed on probation when he or she fails to maintain a cumulative GPA of 2.00. Students on probation must observe rules or limitations the college imposes on their probation as a condition of retention. If, after one semester on probation, the overall GPA is not at least 2.00 and the conditions of probation have not

College of Architecture and Environmental Design Graduate Degrees and Majors

Major	Degree	Administered by
Architecture	M Arch	School of Architecture
Building Design Concentrations: computer aided design, energy performance and climate responsive architecture, facilities development and management	M S.	School of Architecture
Design Concentrations: graphic design, industrial design, interior design	M S.D.	School of Design
Environmental Design in Planning Concentrations: design, history, theory, and criticism, planning	Ph D	College of Architecture and Environmental Design
Environmental Planning Concentration: urban planning	M E P	School of Planning and Landscape Architecture
Environmental Resources	M S.	School of Planning and Landscape Architecture

been met, the student is disqualified for a minimum of two full academic semesters. Appeals may be made to the college Governance and Grievance Committee. For more information, see "Retention and Academic Standards," page 77.

**Upper-Division Retention Standards.** Students in upper division programs are placed on probation when they fail to meet *any* of the following requirements:

- 1 failure, incomplete, or withdrawal from any required course;
- 2 a semester GPA below 3.00;
- 3 a grade of "D" or "E" in a design studio or a design laboratory; or
- 4 violation of the college *Code of Student Responsibilities* or any admission agreement.

Students on probation must observe rules or limitations that the college or academic unit places on their probation as a condition of continuation. Students may be removed from a program (but not necessarily the university) if:

- 1 the requirements imposed are not met or the probationary semester GPA is below 3.00 after one semester on probation;
- 2 failures or withdrawals in required courses are not resolved at the next offering of the course;
- 3 failures or withdrawals from required sequential courses are not resolved; or
- 4 incompletes in required sequential courses are not completed before the first day of class of the next semester.

A student removed from a program is not guaranteed reentry in the program even if probation requirements or requirements placed on readmission are fulfilled. Appeals may be made first to the appropriate academic unit and, if necessary, to the college Governance and Grievance Committee. For more information, see "Retention and Academic Standards," page 77.

**Incompletes.** It is the student's responsibility to contact the instructor regarding the process of requesting and fulfilling an incomplete. Tardiness in contacting the instructor may result in a failing grade. Students must obtain an official "Request for Grade of Incomplete" form from their academic units. The completed form must include a justification,

a listing of requirements that have not been fulfilled, and a proposed schedule of completion. The instructor reviews the request, proposes modifications if necessary, and submits a copy of the request to the appropriate program head (for upper division students) or a college academic adviser (for lower division students). An incomplete in an upper division course that is a prerequisite for sequential courses automatically places the student on probation and denies enrollment in subsequent courses. For more information, see "Incomplete," page 74.

**Withdrawals.** University withdrawal regulations apply to lower division courses. In addition, because the college's upper division curricula are modular and sequential and because space in the programs is limited, a student is expected to progress through the curriculum with his or her class. Withdrawal from a required upper division course automatically places a student on probation. Withdrawal from a required upper division course in a required sequence automatically removes the student from the program beginning the subsequent semester. For more information, see "Grading System," page 73.

**Credit/No Credit.** The only courses accepted toward graduation with a grade of pass/fail or credit/no credit are internships and field studies.

**Foreign Study.** The College of Architecture and Environmental Design maintains active communications with several foreign institutions offering professional course work similar to the programs of the college. This opportunity is available for students who wish to pursue professional studies at a foreign institution in lieu of resident course work for up to one academic year. Any interested student is encouraged to inform the head of his or her academic unit at the earliest possible date of any intentions for foreign study.

Exchange programs currently exist with the Stuttgart University, Germany; Wageningen Agricultural University, the Netherlands; the University of Valladolid, Spain; the University of British Columbia, Canada; and the Autonomous University of Guadalajara, Mexico. Foreign study programs in France, Italy, and Spain and summer credit campus courses are offered by the School of Architecture. The School of Planning and Landscape Architecture offers a summer landscape planning course in Europe.

Students are also encouraged to consider foreign travel for either a semester or an entire academic year. A leave of absence must be requested for foreign study and foreign travel. Each academic unit reserves the right to evaluate the content and the student's competency in each of the courses completed at foreign institutions.

**Internships.** Upper division students in the college are required to complete an internship program during the summer, normally between the third and fourth years of study. In the Environmental Resources degree program, the internship is offered as an elective and is not required.

**Attendance.** Attendance is expected at all classes, laboratories, and seminars and is a criterion for evaluating performance. Absences and missing work due to absences may result in failure of a course or academic probation. A student may not be excused from attending a class except for medical reasons or other serious personal conditions beyond his or her control. Requests for special consideration must be submitted in writing to the instructor. If accepted, a student may be allowed to take a late or special examination or to submit missing work. Tardiness in contacting the instructor is cause for denying acceptance. For university policy regarding religious holidays, see "Equal Opportunity and Affirmative Action," page 25.

**Employment.** It is difficult for students in professional programs to carry part time employment while in school. Acceptance to any of the college's upper division programs presumes a commitment of a minimum of eight hours a day for professional studies. Prior work experience is not a requirement for admission to upper division programs.

**Retention of Student Work.** The college reserves the right to retain any or all projects or work submitted to meet course requirements for the college's future use in instruction, publication, and exhibition.

**Student Leave of Absence.** Upper-division students who withdraw from classes or do not continue sequentially in enrollment must request both a leave of absence and readmission in writing from the head of the appropriate academic unit. Leaves of absence are for one year increments and may be approved for personal reasons, travel, work, or additional study in other disciplines. A student on leave must make the written request for readmission before May 1 for the fall semester of the year of return or before November 1 for the spring semester so that a space may be reserved. Failure to request a leave of absence may result in removal from the program.

## STUDENT RESPONSIBILITY

The purpose of this code is to promulgate standards of conduct for students of the College of Architecture and Environmental Design and to establish procedures for reviewing violations. Students are expected to support and maintain the highest professional standards with regard to their individual conduct and their personal and common environments in the college. Copies of the *Code of Student Responsibilities* are available from the Office of the Dean and a college academic advisor.

## SPECIAL PROGRAMS

The college and its academic units regularly sponsor lecture series, symposia, and exhibits. In addition, faculty and

students attend regional and national meetings of educators and professionals. Academic units sponsor student awards programs and regularly invite professionals and critics to reviews of student projects. The college also participates with the University Honors College, offering courses accepted in that college.

## GENERAL INFORMATION

**Accreditation.** Most states require that an individual intending to become an architect hold an accredited degree. There are two types of degrees that are accredited by the National Architectural Accrediting Board (NAAB): (1) the Bachelor of Architecture, which requires a minimum of five years of study, and (2) the Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor's degree or two years following a related preprofessional bachelor's degree. These professional degrees are structured to educate those who aspire to registration/licensure as architects.

The four year preprofessional degree, where offered, is not accredited by NAAB. The preprofessional degree is useful for those wishing a foundation in the field of architecture, as preparation for either continued education in a professional degree program or for employment options in architecturally related areas. For more information, see "Accreditation and Affiliation," page 20.

**Dean's List.** Undergraduate students who earn 12 or more graded semester hours ("A," "B," "C," "D," or "E" during a semester in residence at ASU with a GPA of 3.50 or higher are eligible for the Dean's List. A notation of achieving the distinction of being listed on the Dean's List appears on the final grade report for that semester.

### College of Architecture and Environmental Design

**Alumni Association.** The College of Architecture and Environmental Design Alumni Association encourages graduates to contribute to the college by acting as liaisons among the college community, students, and practicing professionals. The college also calls on the members of the Architecture Guild of Arizona State, the Arizona Design Institute, the Council for Design Excellence, and the Planning Advisory Committee for advice and to promote the goals of the college.

**Council for Design Excellence.** The Council for Design Excellence has been created to consolidate a partnership between the College of Architecture and Environmental Design and key community leaders who share a vital interest in the development of high quality in the built environment of the Phoenix metropolitan area. By joining together professionals, business and civic leaders, students, and faculty in a common pursuit of design excellence, the council seeks to make a profound difference in the quality of life.

**Affiliations.** For information on affiliations maintained by the college, see "Accreditation and Affiliation," page 20.

**Student Professional Associations.** The purpose of the student associations is to assist students with the transition into professional life and to acquaint them with the profession relating to their program of study. These include the following associations:

- American Institute of Architecture Students
- College of Architecture and Environmental Design Pre Studies Organization



Student Association of the College of Architecture and Environmental Design  
 Student Association of Interior Designers (ASID, IALD, IFDA, IFMA, IIDA)  
 Student Chapter/American Planning Association  
 Student Chapter/American Society of Landscape Architects  
 Student Chapter/Industrial Designers Society of America  
 Student Chapter/Society of Environmental Graphic Designers  
 Student Chapter/Society for Range Management  
 Student Chapter/Soil and Water Conservation Society  
 Student Chapter/Wildlife Society  
 Women in Architecture

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## School of Architecture

Ron McCoy  
 Director

(AED 162D) 480/965-3536  
[www.asu.edu/caed/Architecture](http://www.asu.edu/caed/Architecture)

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### REGENTS' PROFESSOR

COOK

### PROFESSORS

BOYLE, MCCOY MEUNER SCHEATZLE, UNDERHILL

### RESEARCH PROFESSOR

JONES

### ASSOCIATE PROFESSORS

HARTMAN, KROLOFF, KUPPER, LOOPE, McINTOSH, OZEL, SHEYDAY UNDERWOOD, ZYGAS

### ASSISTANT PROFESSORS

ELLIN HAHN MURFF PETRUCC SOROKA  
 SPELLMAN VAN DUZER

## PURPOSE

The architecture program at ASU offers an integrated curriculum of professional courses and focuses on the design laboratory. The program reflects an awareness of the complex factors affecting the quality of the built environment. The program seeks through scholarship, teaching, research, design, and community service to develop the discipline and the knowledge necessary to address the important environmental and design issues faced by society.

In addition to developing knowledge and skills in architectural design, building technology, and professional practice, students are encouraged to select electives from a broad range of approved courses both within the college and across the university. These electives may be selected to devise a minor, to further professional study, or in some other fashion to enrich the student's academic experience.

## ORGANIZATION

The School of Architecture's program is organized by the faculty under the direction and administration of the director and standing committees of the faculty.

## DEGREES

The faculty in the School of Architecture offer the Bachelor of Science in Design degree with a major in Architectural Studies.

The program in architecture culminates with the professional degree Master of Architecture, which is accredited by the National Architecture Accrediting Board (NAAB). Completion of the program is intended to take six years.

Admission to the professional program in architecture is competitive and begins after completion of lower division requirements, as described in "Admission" below and "Degree Requirements," page 123. The professional program includes two years of upper division study leading to the Bachelor of Science in Design and two years of graduate study leading to the Master of Architecture, as described in "Upper Division Professional Program," below.

In cooperation with the University Honors College, the school offers a special honors curriculum for students with University Honors College standing. Consult the advising officers in the school for information.

## ADMISSION

**Lower-Division Program.** New and transfer students who have been admitted to the university and who have selected Architectural Studies are admitted to the lower division architecture program without separate application to the School of Architecture. Completion of lower division requirements does not ensure acceptance to the upper division professional program.

Transfer credits for the lower division program are reviewed by the college faculty. To be admissible to this curriculum, transfer courses must be equivalent in both content and level of offering. A review of samples of work is required for studio classes. Consult a college academic advisor for an appointment.

Entering lower division students who are not prepared to enroll in some of the required courses are required to complete additional university course work. These additional prerequisite courses do not apply to the Bachelor of Science in Design degree requirements.

**Upper-Division Professional Program.** Admission to the upper division professional program is competitive and limited by available resources. Admission is awarded to those applicants demonstrating the highest promise for professional success, including evidence of ability and the prospect for significant public service.

Transfer students who have completed the equivalent required lower division course work may apply to the upper division program. Prior attendance at ASU is not required for application to the upper division program. Applicants who already hold a bachelor's degree in another field should apply to the 3+ year Master of Architecture degree program. See the *Graduate Catalog* for more information.

To be eligible for admission to the upper division program, the following requirements must be met:

1. admission to ASU (note that application and admission to ASU are separate from application and admission to the upper division program).
2. completion of lower division requirements (a minimum of 62 semester hours or equivalents as approved by a college academic advisor and the faculty of the school).

3. a minimum university cumulative GPA of 3.00 as well as a 3.00 GPA based only on the required lower division courses or equivalents; and
4. submission of a portfolio (for detailed information about this requirement, see "Portfolio Format Requirements").

In an unusual circumstance, when the admission standard deficiency is slight, written evidence of extenuating circumstances is convincing, and promise for success is evident, a student may be granted admission to the upper division on a *provisional* basis.

Students not admitted to the upper division program are not dismissed from the school and may reapply or may transfer to other programs. Students who intend to reapply should meet with a college academic advisor.

Applications for transfer into the upper division professional program are considered only if vacancies occur. Transfer applicants must demonstrate that equivalent course work has been completed, and applicants must be academically competitive with continuing students.

Students who successfully complete the upper division requirements receive the Bachelor of Science in Design degree in Architectural Studies. This is not a professional degree. To complete the professional architecture program students must attain the NAAB accredited Master of Architecture degree. Students who receive the B.S.D. are eligible to apply for the graduate program and should consult the *Graduate Catalog* for proper application procedures. This application process is competitive and based on a thorough review of a student's undergraduate preparation and performance.

Students with the four year Bachelor of Science in Design degree (with a major in Architectural Studies or an equivalent degree from another school that offers an accredited professional degree in architecture) should apply directly to the graduate program.

## APPLICATION TO UPPER-DIVISION PROGRAMS

**Upper-Division Application Procedures.** Students should write to a college academic advisor for the application form well in advance of the application deadline. For more information on portfolios, ask for a copy of the *Portfolio Seminar* brochure from a college academic advisor. The following dates and procedures are for students applying to 2000–2001 upper division programs.

**Upper-Division Application Deadlines.** *April 17, 2000.* Portfolio and application documents are due in the school office by 5:00 P.M.

*June 2, 2000.* If the spring 2000 semester includes transfer course work (i.e., course work taken at an institution other than ASU), a student must submit his or her transcripts to the school no later than June 2. These transcripts may be unofficial copies. A second set of official transcripts must be sent to the university Undergraduate Admissions office. Application is not complete until the university receives official transcripts for transfer course work. For those transfer students whose academic term ends in June rather than May, this deadline may be extended upon the written request of the applicant.

*July 3, 2000.* Acceptance notices are mailed no later than July 3.

**Return of Letter of Acceptance.** A signed receipt of acceptance of admission must be received by the school by the date indicated on the Notice of Acceptance. Alternates may be accepted at a later date if space becomes available.

**Matriculation.** An accepted student is expected to begin his or her upper division professional program at the beginning of the immediate fall term. There is no spring admission to the upper division.

**Portfolio Format Requirements.** Each applicant is responsible for obtaining the following documents and including them in the portfolio. Application materials are submitted at one time in a presentation binder (portfolio) with plastic sleeves (8.5" x 11" format only). Items must appear in the following order:

*Page 1.* The application form should be completely filled out with the first page visible. Application forms are available from the college academic advising office.

*Page 2.* The second page of the application should be visible.

*Page 3.* Application Essay. The student's name should be written in the upper right hand corner.

*Page 4.* All college transcripts for both ASU and transfer work should be included through the fall 1999 semester. Copies are acceptable. An academic advisor forwards 2000 ASU transcripts. Applicants wishing to transfer spring semester 2000 work are responsible for submitting these transcripts by June 2 so that they may be added to their portfolios. The student is also responsible for getting an official transfer transcript sent directly to the Office of the Registrar.

*Page 5.* A certificate of admission is necessary only for those students who have been newly admitted for fall 2000 and who are applying directly into an upper division program. The certificate is not required for students currently attending ASU.

**Following Pages (Usually 10–20 Sheets).** Students should present work sufficient to demonstrate the depth and breadth of their creative activity. This work should include (but is not limited to) examples of two- and three-dimensional design and graphics. Each project should be clearly identified (course, length of project, etc.), with a concise accompanying description of the assignment.

Students are encouraged to include additional materials, written or pictorial, that provide additional evidence of skills and abilities and of the aptitude and commitment to the major. When any work submitted is not completely original, the source must be given. When work is of a team nature, the applicant's role should be clearly indicated. Original examples or slides must not be submitted. All examples must be photographs or other reproduction graphic media.

**Return of Portfolios.** Application documents (pages 1–5) remain the property of the College of Architecture and Environmental Design. However, the remaining portfolio is returned after the admissions review, provided the applicant encloses a self-addressed return mailer with sufficient pre-paid postage. Portfolios may be claimed in person after July 3, 2000. If the applicant provides written permission, another person may claim the portfolio. After one year, unclaimed portfolios are discarded. While care is taken in handling the portfolios, no liability for lost or damaged materials is assumed by the college or school.

**ADVISING**

Advising for the lower division curriculum is through the college academic advising office. Advising for upper division students is by assigned faculty advisors and administrative personnel from the School of Architecture.

**DEGREE REQUIREMENTS**

The Bachelor of Science in Design degree in Architectural Studies requires a minimum of 120 hours of course work. Most lower division students pursue option A; however, those who intend eventually to seek an advanced degree in either engineering or building science are encouraged to fulfill the requirements outlined in option B.

**GENERAL STUDIES REQUIREMENT**

The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

**GRADUATION REQUIREMENTS**

In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See "University Graduation Requirements," page 81.

The accredited professional degree Master of Architecture requires an additional 56 hours of approved graduate level course work. For more information, consult the *Graduate Catalog*.

**Architectural Studies—B.S.D.  
Lower-Division Requirements  
Option A**

**First Year**

<b>Fall</b>	
APH 100 Introduction to Environmental Design <i>HU, G, H</i>	3
ENG 101 First Year Composition	3
PHI 103 Principles of Sound Reasoning <i>L, HU</i>	3
or ECN 112 Microeconomic Principles <i>SB 3</i>	
Approved elective	3
SB elective <i>L1 if ECN taken</i>	3
<b>Total</b>	<b>15</b>

<b>Spring</b>	
ADE 120 Design Fundamentals I	3
ENG 102 First Year Composition	3
MAT 210 Brief Calculus <i>A, I</i>	3
Approved electives	6
<b>Total</b>	<b>15</b>

**Second Year**

<b>Fall</b>	
ADE 221 Design Fundamentals II*	3
APH 200 Introduction to Architecture <i>HU, G</i>	3
PHY 111 General Physics <i>S1/S2</i>	3
PHY 113 General Physics Laboratory <i>S1/S2</i>	1

Approved electives	3
Ce elective	3
<b>Total</b>	<b>16</b>

<b>Spring</b>	
ADE 222 Design Fundamentals III*	3
ANP 236 Introduction to Computer Modeling <i>N3</i>	3
PHY 112 General Physics <i>S1/S2*</i>	3
PHY 114 General Physics Laboratory <i>S1/S2*</i>	1
Approved elective	3
SB elective	3
<b>Total</b>	<b>16</b>
Option A lower division total	<b>62</b>

Transfer credits are reviewed by the college and evaluated for admissibility to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering.

Portfolio review is required for transfer studio work. See a college academic advisor for an appointment.

Both PHY 111 and 113 must be taken to secure S1 or S2 credit.

\* Both PHY 112 and 114 must be taken to secure S1 or S2 credit.

**Architectural Studies—B.S.D.  
Upper-Division Professional Program Requirements  
Option A**

**Third Year**

<b>Fall</b>	
ADE 32 Architectural Studio I	4
APH 313 History of Western Architecture I <i>L2/HU*</i>	3
ATE 353 Architectural Construction	3
AVC 301 Architectural Communication	2
Approved elective	3
<b>Total</b>	<b>15</b>

<b>Spring</b>	
ADE 322 Architectural Studio II	5
ANP 331 Analysis and Programming	3
APH 314 History of Western Architecture II <i>L2/HU*</i>	3
ATE 361 Building Structures I	3
<b>Total</b>	<b>14</b>

<b>Summer</b>	
ARP 484 Critical Interdisciplinary	1
<b>Total</b>	<b>1</b>

**Fourth Year**

<b>Fall</b>	
ADE 421 Architectural Studio III	5
ATE 451 Building Systems I	3
ATE 462 Building Structures II	3
Professional elective	3
<b>Total</b>	<b>14</b>

<b>Spring</b>	
ADE 422 Architectural Studio IV	5
ATE 452 Building Systems II	3
Architectural history elective	3

**NOTE:** For the General Studies requirement courses and code such as L1, N3, C, and H, see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Class Catalog Non-Business Courses," page 58.

Professional elective	3
Total	14
Option A upper division total	58
B.S.D. option A minimum total	12

\* These courses may be completed before admission to the upper division. If already completed, a student may substitute an approved elective.

**Architectural Studies—B.S.D.  
Lower-Division Requirements  
Option B**

**First Year**

**Fall**

APH 110 Introduction to Environmental Design HU/G/H	3
ECE 110 Introduction to Engineering Design N3	4
ECN 112 Microeconomic Principles SB	3
or ECN 111 Macroeconomic Principles SB	3
ENG First Year Composition	3
MAT 27 Calculus with Analytic Geometry I NI	4
Total	17

**Spring**

ADE 120 Design Fundamentals I	3
ENG 122 First Year Composition	3
MAT 271 Calculus with Analytic Geometry II VI	4
PHY 121 University Physics I: Mechanics SI/S2	3
PHY 122 University Physics Laboratory I SI/S2	1
Total	14

**Second Year**

**Fall**

ADE 221 Design Fundamentals II	3
APH 210 Introduction to Architecture HU/G	3
ECE 210 Engineering Mechanics I: Statics	3
MAT 27 Calculus with Analytic Geometry III VI	4
PHY 123 University Physics II: Electricity and Magnetism SI/S2	3
PHY 132 University Physics Laboratory II SI/S2	1
Total	17

**Spring**

ADE 222 Design Fundamentals III	3
ANP 236 Introduction to Computer Modeling N3	3
ECE 380 Probability and Statistics for Engineering Problem Solving N2	3
MAT 274 Elementary Differential Equations VI	3
Total	12
Option B lower division total	6

† Transfer credits are reviewed by the college and evaluated for admission to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering.

\* Portfolio review is required for transfer studio work. See a college academic advisor for an appointment.

**Architectural Studies—B.S.D.  
Upper Division Professional Program Requirements  
Option B**

**Third Year**

**Fall**

ADE 322 Architectural Studio	4
APH 314 History of Western Architecture I L2/HU	3

ATE 353 Architectural Construction	3
AVC 301 Architectural Communication	2
ECE 312 Engineering Mechanics II: Dynamics	3
Total	15

**Spring**

ADE 322 Architectural Studio II	5
ANP 331 Analysis and Programming	3
APH 314 History of Western Architecture II L2/HU	3
ECE 313 Introduction to Deformable Solids	3
Total	14

**Summer**

ARP 484 Clinical Internship	4
Total	4

**Fourth Year**

**Fall**

ADE 421 Architectural Studio III	5
ATE 451 Building Systems I	3
ECE 330 Intermediate Engineering Design LI	3
ECE 351 Civil Engineering Materials	3
Total	14

**Spring**

ADE 422 Architectural Studio IV	5
ATE 452 Building Systems II	3
ECE 384 Numerical Analysis for Engineers I	2
SB Elective	3
Total	13
Option B upper division total	60
B.S.D. option B minimum total	120

1 These courses may be completed before admission to the upper division. If already completed, a student may request to substitute an approved elective.

2 Internship is done over the summer between the third and fourth years.

**Master of Architecture Graduate Division Professional Program Requirements**

**Fifth Year**

**Fall**

ADE 521 Advanced Architectural Studio I	5
APH 514 Foundation Theory Seminar	3
ATE 553 Building Systems III	3
ATE 563 Building Structures III	3
Total	14

**Spring**

AAD 551 Architectural Management I	3
ADE 522 Advanced Architectural Studio II	5
APH 515 Current Issues and Topics	3
Professional elective	3
Total	14

**Sixth Year**

**Fall**

ADE 521 Advanced Architectural Studio III	5
ANP 681 Project Development	3
ATE 556 Building Development	3
Professional elective	3
Total	14

<b>Spring</b>	
AAD 552 Architectural Management II . . . . .	3
ADE 622 Advanced Architectural Studio IV . . . . .	5
Approved elective . . . . .	3
Professional elective* . . . . .	3
<b>Total</b> . . . . .	<b>14</b>
Graduate division total . . . . .	<b>56</b>

\* At least one professional elective must be a CAD course

**COURSES**

Subject matter within the school is categorized in the following instructional areas

**Architectural Administration and Management.** AAD courses focus on the organizational and management aspects of architectural practice, including management coordination, administrative procedures, ethics, legal constraints, and the economics of practice.

**Architectural Design and Technology Studios.** ADE courses require the synthesis of knowledge and understanding gained from other course work and develop an understanding of design theory and design skill through a series of comprehensive design projects. Students apply analytical methods, compare alternative solutions, and develop sophisticated technical and conceptual results.

**Environmental Analysis and Programming.** ANP courses develop the ability to analyze and program environmental and human factors as preconditions for architectural design using existing and emerging methods of evaluation and analysis.

**Architectural Philosophy and History.** APH courses develop an understanding of architecture as both a determinant and a consequence of culture, technology, needs, and behavior in the past and present. Studies are concerned with the theory as well as the rationale behind methods and results of design and construction. Case studies are both domestic and international.

**Architecture Professional Studies.** ARP courses provide students with off campus opportunities, educational experience in group and individual studies relative to specific student interests, and faculty expertise, including summer internships and field trips

**Architectural Technology.** ATE courses develop knowledge of the technical determinants, resources, and processes of architecture. These studies focus on the science and technology of design and construction, including materials, building systems, acoustics, lighting, structural systems, environmental control systems, computer applications to design and technology, and both passive and active solar systems. Emphasis is on measurable and quantifiable aspects

**Architectural Communication.** AVC courses develop the student's understanding of communication theory as it applies to architectural design and practice as well as skills

in drawing, graphics, photography, presentation design, and the design process

The courses required in the upper division and graduate levels of the professional program are not open to non majors and students not admitted to the upper division program

**GRADUATE PROGRAMS**

The faculty of the School of Architecture offer a Master of Architecture and a M.S. degree in Building Design. Also, a dual career program, Master of Architecture/Master of Business Administration, has been established in cooperation with the College of Business. Also offered is a college wide, interdisciplinary Ph.D. degree in Environmental Design and Planning with concentrations in design, history, theory, and criticism, and planning. For more information, see the *Graduate Catalog*.

**ARCHITECTURAL ADMINISTRATION AND MANAGEMENT (AAD)**

**AAD 551 Architectural Management I.** 3 S  
Organizational human performance and market influences on architecture firms and projects. Reading, case studies and analysis of managerial problems and solutions. Lecture/discussion. Prerequisite: graduate level standing. Corequisite: ADE 522

**AAD 552 Architectural Management II.** 3 F  
Design development coordination of construction documents, cost estimating, bidding and negotiations, construction observation and post-construction services. Case studies. Lecture/discussion. Prerequisite: AAD 551. Corequisite: ADE 621

**AAD 553 Advanced Architectural Management.** 3 A  
Current issues in the business and practice of architecture. Financial management, project management and design development strategies. Includes case studies. Lecture/discussion. Prerequisite: AAD 551 or instructor approval

**AAD 554 Advanced Construction Contract Administration.** 3 N  
Advanced topics and problems in construction contract administration. Prerequisite: AAD 552 or instructor approval

**AAD 555 Architect as Developer.** 3 A  
Development building real estate construction and acquisition, and the sources for capital. Prerequisite: instructor approval

**AAD 558 Advanced Specifications and Cost Analysis.** 3 N  
Coordination of working drawings, construction specifications and cost estimates. Emphasis on methods of procedures, contract conditions, bonds and bidding procedures. Prerequisite: instructor approval

**AAD 560 Contemporary Architectural Practice.** 3 A  
Advanced issues and directions in design development firm and project management, global markets and expanding cultural responsibilities. Includes case studies. Seminar. Prerequisite: instructor approval

**AAD 681 Professional Seminar. Capstone.** 3 S  
Examination of ethical, political, social and macroeconomic and cultural issues confronting the practice of architecture. Readings and case studies. Seminar. Prerequisite: AAD 552. Corequisite: ADE 622.

**ARCHITECTURAL DESIGN AND TECHNOLOGY STUDIOS (ADE)**

**ADE 120 Design Fundamentals I.** 3 F S SS  
Development of visual literacy introduction to drawing and graphic representation as methods of seeing a design problem solving. Studio. Prerequisite: major in College of Architecture and Environmental Design

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C and H see General Studies page 85. For graduate requirements see University Graduate Requirements page 81. For an explanation of additional non-business courses offered but not listed in this catalog see Classification of Courses page 58.

**ADE 221 Design Fundamentals II.** 3 F

Exercises in basic design stressing creative problem solving methods, principles of composition and aesthetic evaluation. Development of vocabulary for environmental design. Lecture studio Prerequisite ADE 120

**ADE 222 Design Fundamentals III.** 3 S

Application of design fundamentals with an emphasis on architectural issues. Lecture studio Prerequisite APH 200 Prerequisite with a grade of C or higher ADE 221

**ADE 321 Architectural Studio I.** 4 F

Introductory building design problem. Emphasis on design process, communication methods, aesthetics, construction and technology. Lecture studio Prerequisite Prerequisite admission to upper division. Co-requisites ATE 353 AVC 301

**ADE 322 Architectural Studio II.** 5 S

Site and building design problems. Emphasis on programmatic and environmental determinants and building materials and urban contexts. Lecture studio Prerequisite ADE 321 Corequisite ANP 331

**ADE 421 Architectural Studio III.** 5 F

Topical design problems of intermediate complexity including interdisciplinary problems. Lecture, studio, field trips Prerequisite ADE 322 and ARP 484 for Architectural Studies majors. Permission of the school director for other majors in the college.

**ADE 422 Architectural Studio IV.** 5

Topical design problems of intermediate complexity including interdisciplinary problems. Lecture, studio, field trips Prerequisite ADE 322 for Architectural Studies majors. Permission of the school director for other majors in the college.

**ADE 510 Foundation Architectural Studio.** 6 SS

Fundamentals of architectural design, methodology, visualization and representation. Lecture studio field trips Prerequisite admission to graduate program

**ADE 511 Core Architectural Studio I.** 6 F

Application of design fundamentals in architectural problems including construction, technology, programmatic and environmental determinants. Lecture studio, field trips Prerequisite ADE 510 APH 200, 509 Corequisite ATE 353

**ADE 512 Core Architectural Studio I.** 6 S

Application of architectural design fundamentals to increasing complexity problems, including specific studies and activities. Lecture studio field trips Prerequisite ADE 511.

**ADE 521 Advanced Architectural Studio I.** 5 F

Design problems emphasizing theory, aesthetics, and tectonics as influences on architectural form. Lecture studio, field trips Prerequisite admission to graduate program

**ADE 522 Advanced Architectural Studio II.** 5 S

Design problems emphasizing the comprehensive integration of building systems and technologies as influences on architectural form. Lecture, studio, field trips Corequisites AAD 551 ADE 521.

**ADE 621 Advanced Architectural Studio III.** 5 F

Design problems emphasizing the urban context, planning issues, and urban design theory as influences on architectural form. Lecture, studio field trips Corequisites AAD 552 ADE 522; instructor approval

**ADE 622 Advanced Architectural Studio IV.** 5 S

Individual, student-initiated project reflecting a cumulative synthesis of architectural ideas. Studio Prerequisite ADE 621 ANP 681 Corequisite AAD 681

**ADE 661 Bioclimatic Design Studio.** 6 A

Sustainable architecture and site synthesis at a variety of scales emphasizing bioclimatic criteria and the use of passive and low energy systems. Prerequisite professional degree or instructor approval. Corequisite ATE 558

### ENVIRONMENTAL ANALYSIS AND PROGRAMMING (ANP)

**ANP 236 Introduction to Computer Modeling.** 3) F S

Fundamentals of computer operation, geographic information systems, geometric modeling of three-dimensional forms and rendering of light mathematics modeling processes using spreadsheets. Lab Cross-listed as DSC PUP 236 Credit awarded only for ANP 236 or DSC 236 or PUP 236 Prerequisite major in the College of Architecture and Environmental Design. *General Studies N3*

**ANP 331 Analysis and Programming.** 3 S

Analysis of natural and human environmental determinants as the basis of programming and design of the built environment. Lecture studio Corequisite ADE 322

**ANP 431 Architectural Programming Methods.** 3) N

Theory and methods of architectural programming including determinants of architecture information gathering, program preparation and methods of evaluation. Prerequisite professional level standing

**ANP 475 Computer Programming in Architecture.** 3 F S

Computer programming for architectural problems and applications. Lecture lab Prerequisite CSE 183 equivalent

**ANP 477 Computer Applications to Design Problems.** 3) F

Examination of generic microcomputer software in solving architectural design problems. Emphasis on the logic of problem formulation. Lecture lab Prerequisite instructor approval

**ANP 530 Computer Graphics in Architecture.** 3 A

Fundamentals of computer graphics programming in architecture, including graphics hardware, device independent packages 2- and 3-dimensional transformations and data structures. 2 hours lecture 3 hours lab. Prerequisite ANP 475 or instructor approval.

**ANP 561 Architectural Information Processing Systems.** 3) A

Applications of information processing systems to architectural problems. Analysis of computing tools with respect to assumptions and theories. Lecture lab Prerequisites graduate standing instructor approval

**ANP 562 Information Systems for Facilities Management.** 3) N

Introduction to database design and implementation. Assessment of facility management problems from information system points of view. Seminar, lab Prerequisites ANP 477 or 561 graduate standing

**ANP 576 Community Housing.** 3 N

History practices, trends, and forms of housing includes growth of public programs, national and local programs, zoning law, housing distribution and planning principles and policies design review, standards and private development practice

**ANP 577 Housing Environments.** 3 A

Contemporary housing environments, housing types and lifestyles as determined by user preference, density development and property standards, cost, community and privacy security, density movement and the need for open space

**ANP 581 Urban Structure and Design.** 3) F

The nature and dynamics of urbanization and its relationship to architecture and urban design including growth, decay, socialization, planning processes and visualization. Case studies. Prerequisite professional level standing

**ANP 681 Project Development.** 3 F 2000

Definition and elaboration of major ideas for implementation in ADE 622 Advanced Architectural Studio V. Relation to contemporary theory and practice. Seminar Prerequisite ADE 522.

### ARCHITECTURAL PHILOSOPHY AND HISTORY (APH)

**APH 100 Introduction to Environmental Design.** 3 F S

Survey of environmental design includes historical examples and the theoretical, social, technical and environmental forces that shape them. Cross-listed as DSC PUP 100 Credit awarded only for APH 100 or DSC 100 or PUP 100. *General Studies HU G H.*

**APH 200 Introduction to Architecture.** 3 F SS

Survey of issues and polemics affecting current architectural theory and practice. Lecture discussion. *General Studies HU G*

**APH 300 World Architecture I/Western Cultures.** 3 F

Historical and contemporary built environments of Western civilizations. Mediterranean, Europe and the Americas as manifested in cultural history and responses to environmental determinants. Prerequisite nonmajor. *General Studies HU G H*

**APH 301 World Architecture II/Eastern Cultures.** 3) S

Historical and contemporary built environments of Eastern civilizations: Middle East, Central Asia, Far East, and South Pacific as manifested in cultural history and responses to environmental determinants. *General Studies G*

**APH 304 American Architecture.** 3 N

Architecture in the United States from earliest colonial times to present. Prerequisite nonmajor. *General Studies HU*

**APH 305 Contemporary Architecture.** 3 N

European and American from the foundations of the modern movement to the present. Prerequisite nonmajor. *General Studies HU*

**APH 313 History of Western Architecture I.** 3 F

Representative buildings and sites with emphasis on the physical and social settings from antiquity through the Middle Ages. Prerequisite: junior or standing or instructor approval. *General Studies L2/HU*

**APH 314 History of Western Architecture II.** 3 S

Representative examples of architecture and urban design with emphasis on the historical and social contexts, from the Middle Ages to the present. Prerequisite: junior or standing or instructor approval. *General Studies L2/HU*

**APH 411 History of Landscape Architecture.** 3 F

Physical record of human attitudes toward the land. Ancient through contemporary landscape planning and design. Cross listed as PLA 310. Credit is awarded only for APH 411 or PLA 310. *General Studies H.*

**APH 414 History of the City.** 3 F

The city from its ancient origins to the present day. Emphasis on European and American cities during the last five centuries. Cross listed as PUP 412. Credit is awarded only for APH 414 or PUP 412. *General Studies. H.*

**APH 441 Ancient Architecture.** 3 N

Architecture of the ancient Mediterranean world with selective emphasis on major historical complexes and monumental sites. Prerequisite: APH 313. *General Studies. HU*

**APH 442 Preservation Planning.** 3 F

Principles and practices in planning for preservation, conservation and neighborhood redevelopment. Emphasis on evaluation of historical resources. Off campus field program required. Prerequisite: instructor approval.

**APH 443 Renaissance Architecture.** 3 N

Selected examples of Renaissance architecture and urbanism with emphasis on the historical and cultural settings. Prerequisite: APH 314. *General Studies. HU*

**APH 444 Baroque Architecture.** 3 N

Selected examples of Baroque architecture and urbanism with emphasis on relationships between architecture and other arts. Prerequisite: APH 314. *General Studies. HU.*

**APH 446 20th-Century Architecture I.** 3 F

Architecture in Europe and America from the foundations of the modern movement to the culmination of the international style. Prerequisite: major or colege. *General Studies. HU.*

**APH 447 20th-Century Architecture II.** 3 S

Developments in architecture since the international style. Prerequisite: APH 446. *General Studies. HU*

**APH 505 Foundation Theory Seminar.** 3 F

Foundation of conceptual architectural inquiry stressing the reciprocal and interdependent relationship between design and theory. Lecture, seminar.

**APH 509 Foundation Seminar.** 3 SS

Historical, technical, theoretical, environmental, and professional issues in architecture. Lecture, seminar. Field trips. Prerequisite: ADE 510

**APH 511 Energy Environment Theory.** 3 F

Solar and other energy sources in designed and natural environments. Architectural, urban and regional implications of strategies using other renewable resources.

**APH 515 Current Issues and Topics.** 3 S

Critical examination of current architectural issues, topics and discourse. Prerequisite: APH 505

**APH 681 Architectural Theory.** 3 S

Examination of architectural theory. Emphasis on application of theory to practice. Seminar. Prerequisite: instructor approval.

**APH 682 Architectural Criticism.** 3 F

Examination of architectural criticism emphasizing specific methods of criticism and the application for aesthetic judgment. Seminar. Prerequisite: instructor approval.

**APH 683 Critical Regionalism.** 3 N

Critical inquiry in cultural grounding the definition of place in architectural theory and practice. Lecture. Field studies. Prerequisite: APH 446 or 447

**ARCHITECTURE PROFESSIONAL STUDIES (ARP)****ARP 451 Architecture Field Studies.** 1-6 F, S, SS

Organized field study of architecture in specified national and international locations. Credit/no credit. May be repeated with approval of director.

**ARP 484 Clinical Internship.** 1-12) SS

Full-time internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit. Prerequisite: instructor approval.

**ARP 584 Clinical Internship.** 1-12) SS

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

**ARP 684 Professional Internship.** 2-6 S

Field experience in an architectural firm specializing in an area related to the student's advanced study. Integration of theory and state of the art practices. Credit/no credit. Prerequisite: instructor approval.

**ARCHITECTURAL TECHNOLOGY (ATE)****ATE 353 Architectural Construction.** 3 F

Materials and methods of construction. Aesthetic code, and cost considerations. Lecture. Lab. Corequisite: ADE 321

**ATE 361 Building Structures I.** 3 S

Introduction to load distribution on structures. Static analysis of determinate beams, trusses, arches, and rigid frames. Computer application. Lecture, lab. Prerequisite: admission to upper division.

**ATE 451 Building Systems I.** 3 F

Principles of solar radiation, heat and moisture transfer and environmental control systems as form influences. Energy conscious design. Lecture. Lab. Prerequisite: admission to upper division.

**ATE 452 Building Systems II.** 3 S

Architectural design implications of heating, ventilation, and air conditioning systems. Principles of lighting, daylighting, and acoustics, and the application. Lecture. Lab. Prerequisite: ATE 451

**ATE 453 Advanced Architectural Construction.** 3 N

Study of construction materials assembly and architectural detailing. Lecture. Lab. Prerequisite: ATE 353

**ATE 462 Building Structures II.** 3 F

Strength of materials. Stresses in beams and columns. Thermal effects on structures. Analysis, design, and detailing of wood structural system. Lecture. Lab. Prerequisite: ATE 361

**ATE 501 Introduction to Solar Energy.** 3 N

Introduction to theoretical and practical aspects of use of solar radiation and nocturnal cooling for control of building environments.

**ATE 521 Building Environmental Science.** 3 F

Scientific principles relating to comfort and environmental control. Heat and moisture transfer. Solar natural energies for heating, cooling and lighting. Lecture. Lab. Prerequisite: MAT 290 or equivalent.

**ATE 522 Desert Habitat on Technology.** 3 N

Analyses of habitat on approaches in non-technological and technological societies arising from the nature of desert areas.

**ATE 530 Daylighting Design.** 3 S

Daylight analysis availability design sky measurements modeling and simulation integration with passive heating, cooling, building design and energy considerations. Lecture, lab.

**ATE 533 Building Performance Simulation and Visualization.** 3 S

Simulation, analysis and evaluation of building energy, lighting, and acoustic systems using computer software packages. Lecture, lab.

**ATE 534 Earth Sheltering.** 3 S

Fundamentals of earth atmosphere interaction, thermal and moisture effects so appraisal underground passive techniques, comfort and energy efficiency. Lecture. Lab.

**ATE 550 Passive Cooling and Heating I.** 3 S

Theory, analysis and application of passive and low energy systems for thermal comfort in buildings emphasizing heating. Prerequisite: ATE 521

**NOTE:** For the General Studies requirement courses and codes (such as L1, N3, C and H) see "General Studies" page 85. For graduation requirements see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog see "Classification of Courses" page 58.

**ATE 551 Passive Cooling and Heating II.** 3 F

Theory analysis and application of passive and low energy heating systems for thermal comfort buildings emphasizing cooling. Prerequisite: ATE 550

**ATE 552 Energy Parameters in Buildings.** 3 N

Advanced modeling Transient and multidimensional analysis of thermal and daylight performance using variable weather data. Prerequisite: ATE 551 or instructor approval

**ATE 553 Building Systems III.** 3 F

Design and integration of building systems including mechanical electrical plumbing services and systems fire protection and transportation. Prerequisite: admission to upper division or instructor approval

**ATE 554 Building Energy Efficiency.** 3 S

Impact of building design on energy performance. Comparative response to mass operational dynamics and subsystems integration in thermal comfort and efficiency. Prerequisite: ATE 452

**ATE 556 Building Development.** 3 F

Comprehensive design development through the understanding and integration of building materials and systems. Lecture seminar. Prerequisites: AAD 551 ATE 462 553. Corequisite: AutoCAD proficiency

**ATE 557 Construction Documents I.** 3 S

Production of architectural working drawings: e.g. status organization layout site survey plans, sections elevations details, schedules and coordination of related trades. Prerequisite: admission to upper division

**ATE 558 Bioclimatic Parameters.** 3 S

Theory analysis and application of energy related parameters of site climate human comfort and building program for design synthesis

**ATE 560 Building Energy Analysis** 3 F

Computer simulation of building thermal behavior. Software review Detailed study of selected simulation models using case study projects. Prerequisites: ANP 475 or 477 ATE 582.

**ATE 561 Energy Analysis Techniques.** 3 F

Material characteristics of building envelope and comfort conditions in systems as bases for optimization techniques. Prerequisite: ATE 560

**ATE 562 Experimental Evaluation.** 3 A

Instrumentation measurement and computation techniques for analysis of building components and assessment of thermal and human performance. Prerequisite: ATE 521

**ATE 563 Building Structures II** 3 F

Analysis design and detailing of steel buildings and frames. Later analysis of small rigid and braced frame systems. Lecture. Prerequisite: ATE 462 or equivalent.

**ATE 564 Advanced Structures: Concrete.** 3 A

Analysis design and detailing of concrete systems consider continuity joint frames and shear walls and lateral analysis. Computer application. Prerequisite: ATE 563 or instructor approval

**ATE 565 Advanced Structures: High Rise.** 3 A

Developments in high rise construction. Effects of wind and seismic forces. Preliminary analysis design and detailing considering code requirements. Lecture. Prerequisite: ATE 563 or instructor approval

**ATE 582 Environmental Control Systems.** 3 A

Heat gain ventilation and air conditioning systems. Loads psychrometric refrigeration cycle air water distribution controls, energy performance standards and utility rates. 2 hours lecture 3 hours laboratory. Prerequisite: ATE 451 or 521

### ARCHITECTURAL COMMUNICATION (AVC)

**AVC 141 Design Graphics.** 2 N

Orthographic parallel axonometric and perspective projection shades and shadows and basic descriptive geometry for designers. 1 hour lecture 4 hours studio. Prerequisite: major in the College of Architecture and Environmental Design

**AVC 161 Advanced Freehand Perspective Drawing.** 2 N

Introduction to color media and analytical and design drawing exercise. 4 hours studio. Prerequisite: major in the College of Architecture and Environmental Design

**AVC 301 Architectural Communication.** 2 F

Communication skills for architecture studios. Emphasis on graphics drawing conventions media computer aided design design presentation and oral presentations. Lecture studio. Corequisite: ADE 321

**AVC 410 Architectural Presentation Techniques.** 3) F, S

Special techniques of graphic communication as primary presentation tools for the design professional. Prerequisite: AVC 301 or instructor approval

**AVC 411 Architectural Watercolor Presentation Techniques.** (2) N

Introduction of architectural presentation techniques using watercolor as a primary media. Emphasis on color composition and technique. Prerequisite: AVC 301 or instructor approval

**AVC 444 Architectural Photography.** (2) 3 N

Use of photography as a means of architectural study evaluation and record. Introduction to 35 mm camera and darkroom techniques. Lecture. Prerequisite: instructor approval

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## School of Design

Jacques Giard

Director

(AED 154B) 480/965-4135

Fax 480/965-9717

[www.asu.edu/caed/Design](http://www.asu.edu/caed/Design)

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### PROFESSORS

GIARD, KROELINGER, REZNICKOFF

### ASSOCIATE PROFESSORS

BRANDT, CUTLER, DETRIE, JOHNSON, McDERMOTT, NELSEN, PATEL, RATNER, SANFT, WITT

### ASSISTANT PROFESSORS

BERNARD, HARMON VAUGHAN, NICKERSON, NIEDERHELMAN, RANDALL, ROTHSTEIN

Information about the School of Design may be obtained via the Web address provided or by sending electronic mail to [jacques.giard@asu.edu](mailto:jacques.giard@asu.edu).

### PURPOSE

The School of Design educates designers for a professional world that needs informed and developed talent. The curricula emphasize preparation in building bridges between the academic world and the professions. The faculty believe that designers have a responsibility to the public and the communities they serve. The student learns not only the history and theory of the professions and their practical application, but an understanding of systems, functions, scientific, and technical data related to public welfare, safety, and human factors. Students integrate aesthetic values into the products and spaces they design and consider the aspirations of the world in which they live. The goal is to create the best design curricula possible and to develop technically accomplished and conceptually sophisticated graduates who continue to evolve as practicing professionals. With the help of an international network and a faculty of active design professionals, the aim is to educate creative individuals who will achieve a comprehensive understanding of both products and interiors as related to the different cultures in which they exist.

### ORGANIZATION

Programs in the School of Design are organized by the faculty of the school under the direction and administration of the director



## DEGREES

The faculty in the School of Design offer the Bachelor of Science in Design degree with three majors: Graphic Design, Industrial Design, and Interior Design. Applications are not being accepted to the major in Design Science.

**Graphic Design.** The Graphic Design program educates and develops students for both the graphic design profession and graduate work. The goal of the faculty is to offer the best graphic design education, allowing the graduating student every option available. Studio classroom projects are planned to strengthen and refine students' proficiency in the language, process, and technical aspects of the profession. Projects are intended to help students think critically as individuals and in group situations. Students opting for the profession can expect to work in the areas of ad design, brand identity, broadcast graphics, corporate identity, environmental graphics, informational graphics, in house corporate design, museum informational design, publication design, Web site design, and others. Students pursuing graduate studies can expect to be equally well prepared with critical and analytical thinking skills coupled with a diversified portfolio. The program is dedicated to a comprehensive education in graphic design as it relates to the changing communication standards of today and the future.

**Industrial Design.** The program in Industrial Design prepares creative individuals to design the objects used by people daily. The industrial design profession serves the needs of both manufacturers and consumers by developing products that are attractive, useful, safe, convenient, and comfortable to use. The designer's special talents and skills include an aesthetic sense, knowledge of materials and processes, and an understanding of the physical and psychological needs of the user. Designers often serve as a catalyst among management, marketing and engineering staffs.

Through studio projects, students learn to visualize ideas and communicate them to others and to refine skills in free hand sketching, computer aided design, and model making. Assignments balance conceptual aspects with practical techniques. Typical projects include electronics, toys, furniture, sports equipment, and packaging. Stress is placed on the role of the designer in a team effort. Third-year students perform internships in a large corporation or in a consulting design agency.

**Interior Design.** The program in Interior Design is accredited by the national accrediting agency, the Foundation for Interior Design Education Research. The five year curriculum emphasizes design process, technical skill development, problem solving, and the management skills needed to work in collaboration with the allied design professions. The goal is to create high quality environments for human use.

Significant changes in the interior design profession over the last two decades are reflected in the program. The school is committed to integrating computer technology into each level of the curriculum. In doing so, the program offers an excellent environment for experimenting with and testing innovative applications of computer aided design and simulation to interior design.

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C and H see General Studies page 85. For graduation requirements see University Graduation Requirements page 81. For an explanation of additional non-business courses offered but not listed in this catalog see Classification of Courses page 58.

## ADMISSION

**Lower-Division Program.** New and transfer students who have been admitted to the university and who have selected Graphic Design, Industrial Design, or Interior Design as a major are admitted to the appropriate lower division program. Transfer credits for the lower division program are reviewed by the college and evaluated for applicability to this curriculum. To be applicable, transfer courses must be equivalent in both content and level of offering. A review of samples of work is required for studio classes. Consult a college academic advisor for an appointment.

Entering lower division students who are not ready to take some courses in the curriculum (for example, algebra and trigonometry or a second course in computer programming) are required to take additional courses, which do not apply to the Bachelor of Science in Design degree. If these courses are needed, it may take an additional year to complete the lower division program.

Completion of lower division requirements does not ensure acceptance to an upper division professional program.

**Upper-Division Program.** When students have completed the lower division curriculum requirements, they may apply for acceptance to upper division programs in Graphic Design, Industrial Design, or Interior Design. In addition to the portfolio review, the faculty in charge of the Interior Design program conduct a four hour required design charrette to measure minimum competency and understanding of the design process. The limited spaces available each year are awarded to applicants with the highest promise for professional success. The faculty of the School of Design retain the right to admit any meritorious student who may be deficient in a published school criterion. Such admission requires an extraordinary review of the applicant by the school's admissions committee. Should the faculty choose to admit such an applicant, the student is placed automatically on a provisional admission status with stipulations as to what is required to be removed from probation. See "Application to Upper Division Programs," below.

Students not admitted to upper division programs are not dismissed from the university and may reapply or may transfer to other programs. Students who intend to reapply should meet with a college academic advisor.

## GRADUATE PROGRAMS

The faculty in the School of Design offer a collegewide, interdisciplinary Ph.D. degree in Environmental Design and Planning with concentrations in design, history, theory, and criticism; and planning. For more information, see the *Graduate Catalog*.

## APPLICATION TO UPPER-DIVISION PROGRAMS

**Upper-Division Application Procedures.** Students should write to a college academic advisor for the application form well in advance of the application deadline. For more information on portfolios, ask for a copy of the *Portfolio Seminar* brochure from a college academic advisor. The following

dates and procedures are for students applying to 2000-2001 upper division programs.

**Upper-Division Application Deadlines.** The following dates and procedures apply to Industrial and Interior Design portfolio submission only. Information regarding portfolio submission for Graphic Design is listed separately.

*April 1, 2000* Portfolio and application documents are due in the school office by 5:00 P.M. In addition to the portfolio submittal, the Interior Design faculty conduct a half day required design charette to measure minimum competency and understanding of the design process. The date is announced when the portfolio is submitted. Students who do not complete the charette are not considered for upper division admission.

*June 2, 2000* If the spring 2000 semester includes transfer course work (i.e., course work taken at an institution other than ASU), a student must submit his or her transcripts to the school no later than June 2. These transcripts may be unofficial copies. A second set of official transcripts must be sent to the university Undergraduate Admissions office. Application is not complete until the university receives official transcripts for transfer course work. For those transfer students whose academic term ends in June rather than May, this deadline may be extended upon the written request of the applicant.

*July 3, 2000* Acceptance notices are mailed no later than July 3.

*March 15, 2000.* The application deadline for Graphic Design is March 15, 2000. In addition to the portfolio submittal, Graphic Design requires an aptitude test, which is part of the application packet. Application packets can be obtained from the Academic Advising office one month before the due date. Students may obtain their application results by contacting the Program Coordinator for Graphic Design at the end of the first week of April. Acceptance notices will be mailed to admitted students.

**Return of Letter of Acceptance.** A signed receipt of acceptance of admission must be received by the school by the date indicated on the Notice of Acceptance. Alternates may be accepted at a later date if space becomes available.

**Matriculation.** An accepted student is expected to begin his or her upper division professional program at the beginning of the immediate fall term. There is no spring admission to the upper division.

**Graphic Design Requirements Application.** Individual applicants are responsible for obtaining the Graphic Design Application Packet by contacting the College of Architecture and Environmental Design Academic Advising Office (ARCH 141). Application materials are submitted in a portfolio organized by the individual applicant. The student's name must be affixed to the outside, with completed materials appearing in the following order:

1. application to the Graphic Design upper division program;
2. "Commonly Asked Questions" form; and
3. the Graphic Design Aptitude Test. The packet contains complete instructions for completing the standard test, which is to be addressed by each applicant. This test requires the completion of five problems that will be reviewed by the faculty and that will become the portfolio

of materials considered for admission to the upper division program.

### **Industrial and Interior Design Portfolio Format**

**Requirements.** Each applicant is responsible for obtaining the following documents and including them in the portfolio. Application materials are submitted at one time in a presentation binder (portfolio with plastic sleeves 8.5 x 11 format only). The student's name must be affixed to the outside. Items must appear in the following order:

*Page 1.* The application form should be completely filled out with the first page visible. Application forms are available from the college academic advising office.

*Page 2.* The second page of the application should be visible.

*Page 3.* Application Essay.

*Page 4.* All college transcripts for both ASU and transfer work should be included through the fall 1999 semester. Copies are acceptable. An academic advisor forwards 2000 ASU transcripts. (Applicants wishing to transfer spring semester 2000 work are responsible for submitting these transcripts by June 2 so that they may be added to their portfolios. The student is also responsible for getting an official transfer transcript sent directly to the Office of the Registrar.)

*Page 5.* A certificate of admission is necessary only for those students who have been newly admitted for fall 2000 and who are applying directly into an upper division program. The certificate is not required for students currently attending ASU.

**Following Pages (Usually 10-20 Sheets).** Students should present work sufficient to demonstrate the depth and breadth of their creative activity. This work should include, but is not limited to, examples of two- and three-dimensional design and graphics. Each project should be clearly identified (course, length of project, etc.), with a concise accompanying description of the assignment.

Students are encouraged to include additional materials, written or pictorial, that provide additional evidence of skills and abilities and of the aptitude and commitment to the major. When any work submitted is not completely original, the source must be given. When work is of a team nature, the applicant's role should be clearly indicated. Original examples or slides must not be submitted. All examples must be photographs or other reproduction graphic media.

**Return of Portfolios.** Application documents (pages 1-5) remain the property of the College of Architecture and Environmental Design. However, the remainder of the portfolio is returned after the admissions review, provided the applicant encloses a self-addressed return mailer with sufficient prepaid postage. Portfolios may be claimed in person after July 3, 2000. If the applicant provides written permission, another person may claim the portfolio. After one year, unclaimed portfolios are discarded. While care is taken in handling the portfolios, no liability for lost or damaged materials is assumed by the college or school.

### **ADVISING**

Advising for the lower- and upper-division curricula is through a college academic advisor (ARCH 141).

**DEGREE REQUIREMENTS**

The Bachelor of Science in Design degree requires a minimum of 120 semester hours for a major in Graphic Design and Industrial Design and a minimum of 150 semester hours for a major in Interior Design. The program includes required field trips. Students are responsible for these additional costs. Foreign study opportunities are available for honors students. An internship is a required part of the program.

**Graphic Design**

The curriculum in Graphic Design is divided into a lower division (first year) and an upper division program (second, third, and fourth years).

Lower division program . . . . .	30
Upper division program . . . . .	96
Total . . . . .	126

The lower division curriculum balances a foundation in academic subjects such as English, numeracy, and computer technology with departmental foundation courses that include history and theory, as well as studio courses in drawing and design fundamentals as they relate to conceptual design. Students apply for entry into the professional program after fulfilling the first year School of Design core foundation courses. The upper division curriculum includes studio work in graphic design and its relationship to problem solving at multiple scales. Projects are intended to educate students to think critically as individuals and as team participants in small and large corporate facilities. A formal eight week summer internship is included in the professional program, which is coordinated by the faculty. Students intern in a variety of settings, including in-house corporate design, publication design, ad design agencies, and others.

**General Studies Requirement.** The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

**Graduation Requirements.** In addition to fulfilling college and major requirements for this professional degree, students must meet all university graduation and college degree requirements. See "University Graduation Requirements," page 81.

**Graphic Design—B.S.D.  
Lower Division Requirements**

**First Year**

**Fall**

DSC 101 Design Awareness <i>HU, G</i> . . . . .	3
DSC 12 Design Principles I . . . . .	3
ENG 101 First Year Composition . . . . .	3
or ENG 105 Advanced First Year Composition 3 if qualified	

N1 elective . . . . .	3
N3 elective . . . . .	3
Total . . . . .	5

**Spring**

DSC 120 Design Drawing . . . . .	3
DSC 22 Design Principles II . . . . .	3
ENG 102 First Year Composition . . . . .	3
Approved elective <sup>1</sup> . . . . .	3
SB elective . . . . .	3
Total . . . . .	15
Lower division total . . . . .	33

Transfer credits for the lower division program must be equivalent in both content and level of offering. Samples of studio work to be accepted for credit must be provided for evaluation through appointment with the Graphic Design Coordinator in AED 154.

A list of courses that fulfill approved electives is available from the college academic advisor.

**Graphic Design—B.S.D.  
Upper-Division Requirements**

**Second Year**

**Fall**

DSC 494 ST Finding Purpose: Survival in Design . . . . .	3
GRA 283 Letterform I . . . . .	3
GRA 284 Visual Communication I . . . . .	3
L1 elective . . . . .	3
SB elective . . . . .	3
Total . . . . .	15

**Spring**

GRA 286 Visual Communication II <sup>1</sup> . . . . .	3
GRA 287 Letterform II <sup>1</sup> . . . . .	3
Design elective . . . . .	3
HU, H elective . . . . .	3
S1 S2 elective with laboratory I . . . . .	4
Total . . . . .	16

**Third Year**

**Fall**

GRA 318 History of Graphic Design <i>HU</i> . . . . .	3
GRA 383 Typography I <sup>1</sup> . . . . .	3
GRA 386 Visual Communication III . . . . .	3
Approved electives <sup>2</sup> . . . . .	6
Total . . . . .	15

**Spring**

DSC 483 Preinternship Seminar . . . . .	1
GRA 345 Design Rhetoric <i>L2</i> <sup>1</sup> . . . . .	3
GRA 385 Typography II <sup>1</sup> . . . . .	3
GRA 387 Visual Communication IV . . . . .	3
C elective . . . . .	3
Upper division design elective . . . . .	3
Total . . . . .	16

**Summer**

DSC 484 Internship . . . . .	3
Total . . . . .	3

**NOTE:** For the General Studies requirement courses, and codes such as L1, N3, C, and H, see General Studies page 85. For graduation requirements see University Graduation Requirements page 81. For an explanation of additional omnibus courses offered but not listed in this catalog see Classification Courses page 58.

**Fourth Year**

**Fall**

GRA 481 Visual Communication V	3
GRA 494 ST: Graphic Design	3
S, S2 Elective with laboratory II	4
Upper division design elective	3
<b>Total</b>	<b>13</b>

**Spring**

GRA 482 Visual Communication VI	3
CRA 494 ST: Graphic Design	3
Approved electives	3
Upper division approved elective	3
<b>Total</b>	<b>12</b>
Upper division total	9)
B.S.D. minimum total	12)

Most studio courses and some lecture courses are sequential. They must be taken in and may be offered only during the same semester.

\* A list of courses that fulfill approved electives is available from the college academic advisor.

**Industrial Design**

The curriculum in Industrial Design is divided into a lower division and an upper division program.

Lower division program	61
Upper division program	59
<b>Total</b>	<b>120</b>

The lower division curriculum balances a foundation in academic subjects such as English, algebra and trigonometry, computers, and physics with departmental courses that include history as well as studio courses in drawing, design fundamentals, human factors, and materials and processes.

The upper division curriculum includes studio and laboratory work in industrial design, graphics, material design, and professional practice. Students also take a number of approved program electives. A supervised summer internship is part of the curriculum.

Upper division studios emphasize projects that promote an interdisciplinary approach to solving problems and that develop the student's intellectual understanding of the philosophy and direction of methods and theories related to industrial design. Problems proceed from small consumer products with simple task functions to larger and more complex problems and systems. Studio projects also emphasize the design processes: problem resolution through concept ideation, dialogue with specialists in related areas, and product development, presentation, and marketing.

Graduates of the program accept entry-level positions in industry and firms doing product and packaging design. Designers may focus on consumer products, transportation, electronics, medical devices, health products, recreational products, or materials application. Students may also choose to continue their education with graduate studies to enrich their design skills, to specialize, or to prepare for college-level teaching.

**General Studies Requirement.** The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

**Graduation Requirements.** In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See "University Graduation Requirements," page 81.

**Industrial Design—B.S.D.  
Lower-Division Requirements**

**First Year**

**Fall**

DSC 101 Design Awareness <i>HU, G</i>	3
DSC 121 Design Principles I	3
ECN 112 Microeconomics Principles <i>SB</i>	3
ENG 101 First Year Composition	3
or ENG 105 Advanced First Year Composition (if qualified)	
PCS 101 Introduction to Psychology <i>SB</i>	3
<b>Total</b>	<b>15</b>

**Spring**

DSC 122 Design Drawing	3
DSC 127 Design Principles II	3
ENG 102 First Year Composition	3
IND 194 ST: Drafting for Industrial Design	3
MAT 17 Precalculus <i>V</i>	3
<b>Total</b>	<b>15</b>

**Second Year**

**Fall**

DSC 236 Introduction to Computer Modeling <i>M3</i>	3
IND 227 Visual Methods for Problem Solving	3
IND 242 Materials and Design	3
IND 260 Industrial Design I	3
IND 306 20th Century Design <i>I, HU, H</i>	3
<b>Total</b>	<b>15</b>

**Spring**

COM 225 Public Speaking <i>L</i>	3
or approved program elective 3	
IND 228 Imaging and Visualization	3
IND 243 Process and Design	3
IND 261 Industrial Design II	3
PHY 101 General Physics S1/S2	3
PHY 103 General Physics Laboratory <i>S1/S2</i>	1
<b>Total</b>	<b>16</b>
Lower division total	6

Transfer credits for the lower division program must be equivalent in both content and level offering. Sanctions of student work must be provided for evaluation. See a college academic advisor for an appointment.

\* TGECC satisfied.

\* Both PHY 101 and 103 must be taken to secure S1 or S2 credit.

**Industrial Design—B.S.D.  
Upper-Division Requirements**

**Third Year**

**Fall**

DSC 344 Human Factors in Design	3
IND 307 Presentations Graphics	3
IND 304 Principles of Product Design	3
IND 306 Industrial Design III	5
<b>Total</b>	<b>14</b>

**Spring**

GRA 328 Graphic Design	3
IND 361 Industrial Design IV	5

MKT 300 Principles of Marketing .....	3
S1, S2 elective with approved laboratory .....	4
Total .....	15

**Summer**

DSC 484 Internship .....	2
Total .....	2

**Fourth Year**

**Fall**

ENG 301 Writing for the Professions L1 .....	3
IND 460 Design Project I .....	5
IND 470 Professional Practice for Industrial Design L2 .....	3
Approved HU, SB elective .....	3
Total .....	14

**Spring**

IND 461 Design Project II .....	5
IND 474 Design Sem na .....	3
C elective* .....	3
Elective .....	3
Total .....	14

Upper division total .....	59
B.S.D minimum total .....	120

\* A list of courses that fulfill approved program electives is available from the college academic advisor

**Interior Design**

The curriculum in Interior Design is divided into a lower division (first and second year) and an upper division program (third, fourth, and fifth years):

Lower division program .....	56
Upper division program .....	94
Total .....	150

The lower division curriculum balances a foundation in academic subjects such as English, algebra and trigonometry, computer technology, and physics with departmental courses that include history and theory, as well as studio courses in drawing, design fundamentals, and conceptual design.

The upper division curriculum includes studio work in interior design, furniture design, construction methods, structures, codes as related to materials and finishes, human factors, environmental control systems, as well as lecture courses in the history of interior design, decorative arts, and textiles. An eight week supervised summer internship is part of the curriculum. The fifth year is an interdisciplinary year in which students address real life environmental problems. This final year is a capstone experience that utilizes all previous learning within and outside the professional program. The student's final design project is completed in consultation with a member of the local professional community.

Graduates from the program accept entry level professional positions in a variety of settings, including interior design firms, departments of space planning, architectural firms, public institutions, and industry. Students may also choose to continue their education through graduate studies,

which offer greater enrichment in studio disciplines and which contribute to the possibility for postsecondary level academic appointments, giving the recipients highly sought after academic credentials.

**General Studies Requirement.** The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

**Graduation Requirements.** In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See "University Graduation Requirements," page 81.

**Interior Design B.S.D.  
Lower Division Requirements<sup>1</sup>**

**First Year**

**Fall**

DSC 10 Design Awareness HU G .....	3
DSC 12 Design Principles I .....	3
ENG 101 First Year Composition .....	3
or ENG 115 Advanced First Year Composition 3 if q tial tied	
MAT 170 Precalculus V .....	3
SB and C e e c t v e .....	3

Total .....	15
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**Spring**

ARS 102 Art of the Western World 1HU .....	3
DSC 120 Design Drawing .....	3
DSC 122 Design Principles II .....	3
ENG 112 First Year Composition .....	3
or HU elective if ENG 115 is taken 3	
PHY 11 General Physics S1 S2 .....	3
PHY 113 General Physics Laboratory S1 S2 .....	3

Total .....	16
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**Second Year**

**Fall**

DSC 236 Introduction to Computer Modeling V3 .....	3
INT 194 ST Drafting for Interior Design .....	3
INT 273 Interior Design Issues and Theories HU .....	3
INT 235 User Needs and Behavior in Interior Design .....	3

Total .....	12
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**Spring**

COM 225 Public Speaking L1 .....	3
or approved 1 elective 3	
INT 226 Media for Design Development .....	3
INT 231 Concepts for Interior Design .....	3
S1 or S2 elective with laboratory .....	4

Total .....	13
Lower division total .....	56

<sup>1</sup> Transfer credits for the lower division program must be equivalent in both content and level of offering. Samples of studio work must be provided for evaluation. See a college academic advisor for an appointment.

- Both PHY 11 and 13 must be taken to secure S1 or S2 credit.

**NOTE:** For the General Studies requirement courses, and codes such as L1 N3 C and H see "General Studies" page 85. For graduation requirements see "University Graduation Requirements" page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Classification of Courses" page 58.

**Interior Design—B.S.D.  
Upper-Division Requirements**

**Third Year**

**Fall**

DSC 344	Human Factors in Design .....	3
INT 310	History of Interior Design I <i>HU, H</i> .....	3
INT 340	Interior Codes: Public Welfare and Safety .....	3
INT 364	Interior Design Studio I .....	5
INT 366	Construction Methods in Interior Design .....	3
Total .....		17

**Spring**

DSC 483	Preinternship Seminar .....	1
INT 311	History of Interior Design II <i>HU, H</i> .....	3
INT 341	Interior Materials and Finishes .....	3
INT 365	Interior Design Studio II .....	5
INT 455	Environmental Control Systems .....	3
Total .....		15

**Summer**

DSC 484	Internship .....	3
Total .....		3

**Fourth Year**

**Fall**

ENG 301	Writing for the Professions <i>LI</i> .....	3
INT 412	History of Decorative Arts in Interiors <i>HU</i> .....	3
INT 442	Specifications and Documents for Interiors <i>I,2</i> .....	3
INT 457	Acoustics for Interior Design .....	3
INT 464	Interior Design Studio III .....	5
Total .....		17

**Spring**

INT 413	History of Textiles in Interior Design .....	3
INT 458	Lighting for Interior Design .....	3
INT 465	Interior Design Studio IV .....	5
SB elective	.....	3
Total .....		14

**Fifth Year\***

**Fall**

INT 422	Facilities Planning and Management I .....	3
INT 446	Furniture Design and Production .....	3
INT 466	Interior Design Studio V .....	5
Approved degree project elective .....		3
Total .....		14

**Spring**

INT 423	Facilities Planning and Management II .....	3
INT 467	Interior Design Studio VI .....	5
INT 472	Professional Practice for Interior Design .....	3
Approved degree project elective .....		3
Total .....		14

Upper-division total .....	94
B.S.D. minimum total .....	150

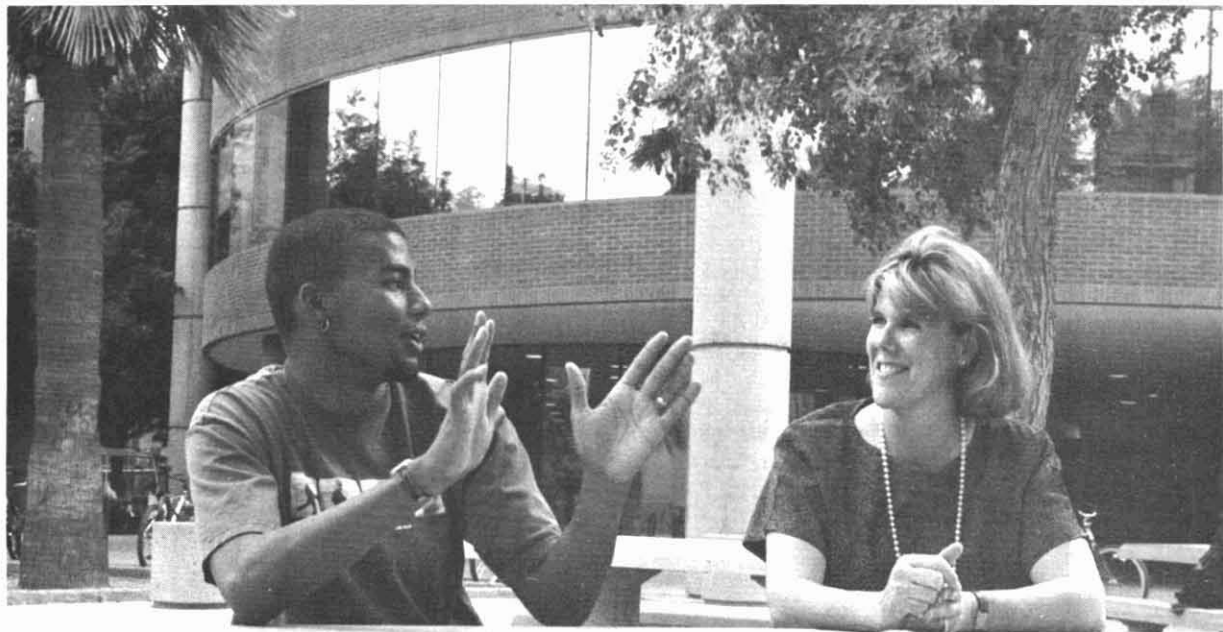
\* See "Fifth Year."

**Fifth Year.** During the fifth year, the student concentrates on research and application of that research related to the development of a comprehensive project. This year is self-directed in nature and prepares the student for independent thinking and creative problem solving. The fifth-year experience promotes high expectations for producing professional work that represents the culmination of the major's academic experience. It should be noted that the fifth-year studio sequence is designed to draw majors from the upper-division programs of industrial design, graphic design, and architecture, thus furthering a real-life interdisciplinary problem-solving experience.

**MINOR**

**Interior Design History**

The minor in Interior Design History is available to students interested in design and culture. The courses designated for the minor are part of the professional studies in



Sophomore Steve Cowan chats with his mentor, staff member Mara Affre, about his choice of classes.

Tim Trumble photo

interior design within the School of Design. Moreover, the courses serve to inform the students about the importance of the global community, especially sociocultural groups, and the impact of the global community on the design of the interior environment

The selected courses satisfy the minimum requirement (18 semester hours) for the minor. To enhance the understanding of the subject matter, the selected courses are sequential in nature and require certain prerequisites. Consequently, students should carefully note the semester in which any of these courses is offered. The only exception to this rule is INT 223

**Required Courses**

DSC 101 Design Awareness	HU G	.....	3
INT 223 Interior Design Issues and Theories	HU	.....	3
INT 310 History of Interior Design I	HU, H	.....	3
INT 311 History of Interior Design II	HU, H	.....	3
INT 412 History of Decorative Arts in Interiors	HU	.....	3
INT 413 History of Textiles in Interior Design		.....	3
Total		.....	8

The minor in Interior Design History is open to students majoring in: Architectural Studies, Art, Communication, Psychology, or Sociology and students in any College of Business major or the Bachelor of Interdisciplinary Studies program. All other majors are considered on an individual basis and approved by the coordinators of the Interior Design program within the School of Design. To pursue the minor in Interior Design History, students must have a minimum cumulative GPA of 2.50.

**DESIGN (DSC)**

- DSC 100 Introduction to Environmental Design.** (3) F S  
Survey of environmental design includes historic examples and the theoretical, social, technical and environmental forces that shape them. Cross-listed as APH PUP 100. Credit is awarded only for APH 100 or DSC 100 or PUP 100. *General Studies HU G H*
- DSC 101 Design Awareness.** 3 F  
Survey of cultural, global and historical context for the design professions. *General Studies HU G*
- DSC 120 Design Drawing.** 3 S  
Drawing as language to explore and communicate ideas. Development of drawing aptitude as language and process for design thinking. 1 hour lecture 5 hours studio
- DSC 121 Design Principles I.** 3 F  
Design as a language and process for creative thinking and realization. 1 hour lecture 5 hours studio. Prerequisite: major in the College of Architecture and Environmental Design
- DSC 122 Design Principles II.** 3 S  
Continued exploration of design as a language and process for creative thinking and realization. 1 hour lecture 5 hours studio. Prerequisite: DSC 121.
- DSC 236 Introduction to Computer Modeling.** 3 F, S  
Fundamentals of computer operation, geographic information systems, geometric modeling of three-dimensional forms and rendering of digital mathematical modeling of processes using spreadsheets. Lab. Cross-listed as ANP PUP 236. Credit is awarded only for ANP 236 or DSC 236 or PUP 236. Prerequisite: major in the College of Architecture and Environmental Design. *General Studies N3*
- DSC 344 Human Factors in Design.** 3 F  
Man-machine environment systems, human characteristics and behavior applied to design of products, systems and the operating environment

- DSC 483 Pre Internship Seminar.** 1 S  
Preparation of internship materials that produce and enhance a successful internship experience. Seminar. Prerequisite: 3rd year major in the department
- DSC 484 Internship.** 1 3 SS  
Full-time summer internship under supervision of practitioners in the Phoenix area or other locales. Prerequisite: instructor approval
- DSC 494 ST: Special Topics.** 3 F  
Addressing Purpose Survival Design
- DSC 520 Contemporary Design Issues.** 3 F S  
Projected applications in design, production planning and decision-making processes. Lecture/seminar. Prerequisites: NT 310 and 311 or equivalents.
- DSC 524 Illumination and Acoustics.** 3) N  
Research and laboratory investigation of advanced illumination and acoustics issues affecting design. Emphasis on human factors and performance aspects. Prerequisites: NT 457 and 458 or equivalents.
- DSC 525 Design Methodologies.** 3 F  
Practical exercises and studies in problem solving strategies, problem definition and supporting theory for the designer. Lectures/seminars, lab. Prerequisite: senior or graduate standing
- DSC 527 Modern Design Theory.** 3 S  
Aesthetic, political, economic and social theories that have shaped modern design theory as the basis for design philosophies. Lectures/seminars. Prerequisite: DSC 525 or equivalent
- DSC 529 Design Criticism.** 3 F  
Critical methods applied to design as material culture and human expression, evaluation achievement versus intention. Lecture/seminar. Prerequisite: DSC 527 or equivalent
- DSC 544 Human Factors Systems and Documentation.** 3) F  
Advanced topics associated with theory and methods of human factors in design. Individual projects stress problem organization, evaluation, and documentation. Lectures, seminars/lab. Prerequisite: DSC 344 or equivalent
- DSC 552 Computer Simulation in Design.** 3 F  
The use of computer graphics as a medium to develop and present images of the environment for analysis and perception. Lecture/lab. Prerequisite: senior or graduate standing
- DSC 553 Computer Imaging and Visual Perception.** 3 S  
Issues and applications of computer simulation as a tool for describing and testing human interface with the environment. Lecture/lab. Prerequisite: senior or graduate standing
- DSC 558 Daylighting.** 3 N  
Daylighting as a design determinant: concepts, technical methodology, experiments and case studies. Lecture/studio. Prerequisite: senior or graduate standing
- DSC 580 Practicum: Methods of Teaching Design.** (3) F  
Background and development of design education theories. Concepts of student teaching methods. Comprehensive student project development and evaluation methods. Prerequisite: graduate standing

**GRAPHIC DESIGN (GRA)**

- GRA 283 Letterform I.** 3 F  
Drawing of letterforms with focus on proportion and structure. Introduction to letterform nomenclature and classification. 6 hours a week. Prerequisites: DSC 122; acceptance into Graphic Design program
- GRA 284 Visual Communication I.** 3) F  
Theoretical and applied studies in shape, drawing and color. 6 hours a week. Prerequisite: GRA 283
- GRA 286 Visual Communication II.** 3 S  
Transition from theoretical to applied problems. Emphasis on refinement of visual skills. 6 hours a week. Prerequisites: GRA 284; acceptance into Graphic Design program. Corequisite: GRA 287
- GRA 287 Letterform II.** 3 S  
Continuation of Letterform I with an emphasis on lowercase letters, baselines, penwriting and font design. 6 hours per week. Prerequisites: GRA 284; acceptance into Graphic Design program. Corequisite: GRA 286

**NOTE:** For the General Studies requirement, courses and codes such as L1, N3, C and H, see General Studies page 85. For graduation requirements, see "University Graduation Requirements" page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses" page 58.

- GRA 318 History of Graphic Design.** (3 F)  
Survey of development in the graphic arts: innovative printing methods, aesthetic values and social and cultural environments that shape them. *Genera Studies HU*
- GRA 328 Graphic Design.** (3 S)  
Packaging applications and planning are investigated and applied to the development of a design for a product: one structured as a system. Lab. Prerequisite: ND 327
- GRA 345 Design Rhetoric.** (3 F S)  
Development of critical thinking and expression of ideas in class and persuasive written and spoken form. Prerequisites: ENG 101 102. *Genera Studies L2*
- GRA 382 Graphic Representation.** (3) F  
Studio practice in drawing with an application toward graphic communication. 6 hours a week. May be repeated once for credit. Prerequisite: GRA 284
- GRA 383 Typography I.** (3 F)  
Theoretical exercises in spatial and textual qualities of type. Problems in tension, activation, and balance. Exercises in simple typographical applications. 6 hours a week. Prerequisites: GRA 286 287 Corequisite: GRA 386
- GRA 385 Typography II.** (3 S)  
Problems in composition, choice and combination of typefaces for mats, and the application to a variety of design projects. 6 hours a week. Prerequisite: GRA 383 Corequisite: GRA 387
- GRA 386 Visual Communication III.** (3 F)  
Problems in specific design applications such as poster, packaging, publications. Emphasis on development of concepts in visual communication. 6 hours a week. Prerequisites: GRA 286 287 Corequisite: GRA 383
- GRA 387 Visual Communication IV.** (3) S  
Client-oriented projects. Problems are multifaceted and the emphases are on continuity of design in more than one medium and format. 6 hours a week. Prerequisites: GRA 383 386 Corequisite: GRA 385
- GRA 481 Visual Communication V.** (3 F S)  
Studio problems with an emphasis on analysis, problem solving, and professional portfolio preparation. 6 hours a week. Prerequisites: GRA 385, 387
- GRA 482 Visual Communication VI.** (3) S  
Individual and group projects with outcomes. A projects cumulative in an exhibit. 6 hours a week. Prerequisite: GRA 481.
- GRA 485 Graphic Design Workshop.** (3) F, S SS  
Preprofessional certificate/designer's tutorials from concept to printed work. Studio workshop and internships for selected students. 6 hours a week. May be repeated once for credit. Prerequisite: instructor approval.
- GRA 494 ST: Special Topics.** (3 F)  
(a) Graphic Design

### INDUSTRIAL DESIGN (IND)

- IND 194 ST: Special Topics.** (3 S)  
a) Drafting for Industrial Design
- IND 227 Visual Methods for Problem Solving.** (3 F)  
Introduction to conceptual design activity based on the mind-eye-media feedback loop. Graphic language used to represent conjecture, analysis, synthesis of objects, and their contexts. Seminar. Studio. Prerequisite: DSC 122
- IND 228 Imaging and Visualization.** (3 S)  
Design activities stress graphic language abstract on practiced for presentation. Structure of critical, conceptual description, interpretation and evaluation are discussed. Seminar. Studio. Prerequisite: ND 227
- IND 242 Materials and Design.** (3 F)  
Materials application in design: introduction to characteristics and properties of metals and organic materials, including plastics and non-organic materials.
- IND 243 Process and Design.** (3 S)  
Influences of industrial process on design: introduction to basic material processes and post-forming processes. Emphasis on appearance enhancement and design constraints of material processing. Prerequisite: ND 242
- IND 260 Industrial Design I.** (3 F)  
Introduction to the method and process of the industrial designer. Determinants necessary in a mass product design. 1 hour lecture, 2 hours studio. Prerequisite: DSC 122

- IND 261 Industrial Design II.** (3 S)  
Issues of physical form development related to product and design, form development properties of paper, fibers, wood, metal, and plastics. 1 hour lecture, 2 hours studio. Prerequisite: ND 260 or equivalent.
- IND 316 20th Century Design I.** (3 F)  
Modern European and American design from 1900 to 1940. Emphasis on transportation, product, furniture, exhibition, and graphic design. *Genera Studies HU H*
- IND 317 20th-Century Design II.** (3 S)  
Modern European, Asian, and American design since 1940. Emphasis on transportation, product, furniture, exhibition, and graphic design. *Genera Studies HU H*
- IND 327 Presentation Graphics.** (3 F)  
Methods for portfolio and professional product presentation using graphic media for information transfer are studied. Aesthetic judgment, organization, and craftsmanship are stressed. Seminar. Studio. Prerequisite: IND 228.
- IND 354 Principles of Product Design.** (3 F)  
Influences of physical and mechanical concepts in product design: mechanisms, kinematics, and fastening systems. Concepts of analysis for product design: influences of concepts on aesthetics. Prerequisites: MAT 117 PHY 111
- IND 355 Plastics Design.** (3 S)  
Modelling for part requirements: molded hoses, threads, inserts, fasteners, and joining, decorating reinforced plastics. Prerequisite: ND 354
- IND 360 Industrial Design III.** (5 F)  
Methods of visual thinking, conceptualization, and deal on related to building sketches in professional design presentation on techniques. 10 hours studio. Prerequisite: department approval
- IND 361 Industrial Design IV.** (5 S)  
Emphasis on developing ideas into a complete functional product: including survey and application of aesthetics, human factors, materials, and manufacturing. 10 hours studio. Prerequisite: IND 360
- IND 460 Design Project I.** (5 F)  
Complete analysis of the product unit as an element of mass production: featuring marketing, technology, human factors, and visual design. Emphasis on professional standards. 10 hours studio. Prerequisites: DSC 484 ND 361
- IND 461 Design Project II.** (5 S)  
Product design, with emphasis on systems interaction. Cumulative on design process and technique. Individual design project directed on-site encouraged. 10 hours studio. Prerequisite: ND 361
- IND 470 Professional Practice for Industrial Design.** (3 F)  
Business procedures: management techniques, accounting systems, ethics, and legal responsibilities of the design professional. May be repeated for credit. Prerequisite: senior standing. *Genera Studies L2*.
- IND 474 Design Seminar.** (3 S)  
Manufacturer's liability statutes, regulations, and common law rules. Role of expert witnesses, insurance, and product safety programs. Seminar. Prerequisite: senior standing.

### INTERIOR DESIGN (INT)

- INT 194 ST: Special Topics.** (3 F)  
a) Drafting for Interior Design
- INT 220 Media for Design Development.** (3 S)  
Graphic representation methods used to describe and analyze space: emphasis on quick presentation on techniques. 6 hours studio. Prerequisite: DSC 121
- INT 223 Interior Design Issues and Theories.** (3 F)  
Interior issues, theories, and philosophies. Emphasis on unique social and cultural factors that shape 20th century design concepts. *Genera Studies: HU*
- INT 231 Concepts for Interior Design.** (3 S)  
Conceptual design development: including scale and proportion, light, texture, form, volume, and spatial hierarchy, passage and repose. 1 hour lecture, 4 hours lab. Prerequisite: DSC 122
- INT 235 User Needs and Behavior in Interior Design.** (3 F)  
Applications of conceptual design to issues of programming and space planning: user needs and behavior. 1 hour lecture, 4 hours lab. Prerequisite: INT 231
- INT 310 History of Interior Design I.** (3 F)  
The design of interior space as a expression of cultural influences to 1835. *Genera Studies HU H*



**INT 311 History of Interior Design II.** 3 S  
Design of interiors as an expression of cultural influences from 1835 to the present. Prerequisite: INT 310 or instructor approval. *General Studies: HU, H*

**INT 340 Interior Codes, Public Welfare and Safety.** 3 F  
Codes and regulations as performance criteria for interior design. Corequisite: NT 366

**INT 341 Interior Materials and Finishes.** 3) F  
General analysis of quality control measures relating to interior design materials, finishes and performance criteria. Prerequisites: INT 340, 366

**INT 364 Interior Design Studio I.** 5 F  
Studio problems in interior design related to behavioral response in personal and small group spaces. 10 hours studio. Prerequisite: department approval

**INT 365 Interior Design Studio II.** 5 S  
Studio problems in interior design with emphasis on issues of public and private use of interior spaces of assembly. 10 hours studio. Prerequisite: NT 364

**INT 366 Construction Methods in Interior Design.** (3 F  
Design theory related to analysis, materials, and building techniques of horizontal and vertical construction in interior design. Lecture field trips. Corequisite: NT 340

**INT 412 History of Decorative Arts in Interiors.** 3) F  
The design of decorative arts as an expression of cultural influences and as an extension of interior spaces. Prerequisite: NT 311 or instructor approval. *General Studies: HU*

**INT 413 History of Textiles in Interior Design.** 3 S  
Cultural and historical expression of textiles as related to interiors. May include field trips. Prerequisite: NT 412 or instructor approval.

**INT 422 Facilities Planning and Management I.** 3) F  
The facility management process in large scale organizations. Planning, long-range forecasting, and productivity. Project management methodology using micro-based software programs. Prerequisite: senior or standing

**INT 423 Facilities Planning and Management II.** 3) S  
The format of facilities policies, procedures and standards. The facility database, space allocations and management process. Evaluation of programming criteria. Prerequisites: NT 422, senior or standing

**INT 442 Specifications and Documents for Interiors.** 3) F  
Contract specifications, documents, schedules and bidding procedures for interior design. Prerequisites: NT 341, 365. *General Studies: L2*

**INT 446 Furniture Design and Production.** 3 F  
Design, construction, cost estimating and installation in interior furniture and millwork. 1 hour lecture, 4 hours studio

**INT 455 Environmental Control Systems.** 3 S  
Survey of environmental control systems and their application in the design of buildings. Lecture field trips. Prerequisites: MAT 117, 118, PHY 111, 113, senior or standing

**INT 457 Acoustics for Interior Design.** 3 F  
Physical properties of sound. Studies pertaining to sound absorption, materials, constructions and room acoustics. Prerequisites: MAT 170; PHY 111, 113

**INT 458 Lighting for Interior Design.** 3 S  
Light as an aspect of interior design. Evaluation of light sources for distribution and color and cost

**INT 464 Interior Design Studio III.** 5 F  
Studio problems in interior design related to commercial spaces. 10 hours studio. Prerequisites: DSC 484, NT 365

**INT 465 Interior Design Studio IV.** 5 S  
Studio problems in interior design related to health and educational facilities. 10 hours studio. Prerequisite: NT 464

**INT 466 Interior Design Studio V.** 5 F  
Advanced interior design problem solving design theory and criticalicism. Thesis project development based upon the major's concentration. 10 hours studio. Prerequisite: department approval

**INT 467 Interior Design Studio VI.** 5 S  
Advanced series of specialized projects or continuation of thesis project based upon the major's concentration. 10 hours studio. Prerequisite: department approval

**INT 472 Professional Practice for Interior Design.** (3) S  
Business procedures, project control fee structures, and professional product abilities

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## School of Planning and Landscape Architecture

Frederick Steiner  
*Director*  
(AED 158A) 480/965-7167  
[www.asu.edu/caed/Planning](http://www.asu.edu/caed/Planning)

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### PROFESSORS

BRADY, BROCK, KHL, LA, MUSCHKATEL  
PIJAWKA, STEINER

### ASSOCIATE PROFESSORS

COOK, GREEN, KIM, McSHERRY, MILLER, SAN MARTIN,  
WHYSONG, YABES

### ASSISTANT PROFESSORS

CAMERON, CREWE, EWAN,  
FISH, EWAN, GUHATHAKURTA

### PURPOSE

The faculty in the School of Planning and Landscape Architecture offer a curricula that provides an education for careers in environmental planning, environmental resource management, housing and urban development, landscape architecture, urban and regional planning, and urban design. The goal of the faculty is to advance the profession of planning through scholarship, teaching, research, and community service.

Planners and landscape architects work on projects that range in scale from site and landscape development to the design of entire communities and the formulation of policies that shape urban and regional growth. Planning, landscape architecture, and environmental resource management graduates work for both private firms and government agencies. Their work typically involves fields such as land-use planning, housing, natural resource management, urban transportation, development controls, and environmental impact assessment.

For graduates from environmental resources, employment opportunities in environmental resource management, range ecology, land reclamation, and soil conservation exist with both private firms and government agencies.

### ORGANIZATION

The programs are organized by the faculty of the school under the direction and administration of the program coordinators and the school director.

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**NOTE:** For the General Studies requirement courses and codes (such as L1, N3, C and H) see "General Studies" page 85. For graduation requirements see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog see "Catalog of Courses" page 58.

**DEGREES**

The faculty in the School of Planning and Landscape Architecture offer the B.S. degree in Environmental Resources, Bachelor of Science in Planning degree in Urban Planning, Bachelor of Science in Landscape Architecture degree, and Bachelor of Science in Design degree in Housing and Urban Development.

**Bachelor of Science in Planning (B.S.P.)**

The B.S.P. degree prepares students for careers in urban planning. Students take courses that include comprehensive planning, socioeconomic and environmental analysis, computer and analytical methods, planning law, site planning, landscape architecture, urban design, and public policy for formulation and administration. An internship or an approved elective is required between the third and fourth years. Many students continue to specialize in planning at the graduate level. Students in planning are exposed to the theories, methods, and practices of the profession of planning.

**Bachelor of Science in Landscape Architecture (B.S.L.A.)**

This degree prepares students to be professional landscape architects. Students explore the reasons for and the techniques involved in the analysis, planning, and design of the environment, both natural and built. The B.S.L.A. is an accredited program.

**Bachelor of Science in Design (B.S.D.)**

A B.S.D. degree with a major in Housing and Urban Development (HUD) educates and trains professionals to lead in the production of high quality affordable housing in the development of creatively designed and soundly planned neighborhoods and communities, in the revitalization of communities, and in the exemplification of social inclusiveness and environmental sensitivity in responsible land development. HUD graduates may pursue careers in the private home development industry, in publicly sponsored housing and community redevelopment, with nonprofit housing agencies, or in postgraduate housing and urban development research and education. The B.S.D. with a major in Housing and Urban Development is offered in conjunction with the College of Extended Education.

**Environmental Resources—B.S.**

The concentration in natural resource management is available with options in wildlife habitat management and applied ecology. In addition, particular attention is given to the study of ecosystem characteristics as they relate to the use of renewable resources.

**MINORS**

**Environmental Resources**

The minor in Environmental Resources is available to students interested in environmental courses but who wish to pursue other majors. The minor requires a minimum of 16 semester hours. The courses are designed to appeal to and inform the nonenvironmental resources student and cover a broad range of topics.

All students must complete the required courses

<b>Required Courses</b>	
ERS 133 Soils and Environmental Quality <i>SI 52</i>	4
ERS 246 Introduction to the Environmental Sciences <i>G</i>	3
ERS 481 Ecosystem Management and Planning <i>L2</i>	3
<b>Total</b>	<b>10</b>

Two additional courses must be selected from the optional course list.

**Optional Courses**

ERS 225 Soils	3
ERS 333 Water Resources Management	3
ERS 360 Range Ecosystem Management	3
ERS 365 Watershed Management	3
ERS 370 Forest Ecosystem Dynamics	3
ERS 407 Wetland Plants and Habitats	4
ERS 410 Wildlife Habitat Relations	4
ERS 433 Riparian Ecosystem Management	3
ERS 460 Applied Systems Ecology	3
ERS 475 Wildlife and Range Animal Management	3

\* ERS 226 Soils Laboratory I must also be taken

The minor is automatically open to students from the following majors: Architectural Studies, Biology, Civil Engineering, Geography, Graphic Design, Industrial Design, Interior Design, Landscape Architecture, Planning, Plant Biology, and Recreation. Students pursuing other majors will be considered on an individual basis. To pursue a minor in Environmental Resources, all students must have a minimum cumulative GPA of 3.00. These students must submit a letter of application to the School of Planning and Landscape Architecture seeking approval to enter the minor program.

**Urban Planning**

The minor in Urban Planning is designed for students who are interested in the field but who wish to pursue other majors. The course selection is designed to provide an overview of the field and offer information with broad appeal.

All students must complete a minimum of 15 semester hours from the following courses

PUP 301 Introduction to Urban Planning <i>LI*</i>	3
PUP 412 History of the City <i>H</i>	3
PUP 420 Theory of Urban Design <i>HU</i>	3
PUP 425 Urban Housing Analysis	3
PUP 432 Planning and Development Control Law	3
PUP 433 Zoning Ordinances, Subdivision Regulations and Building Codes	3
PUP 442 Environmental Planning	3
PUP 444 Preservation Planning	3
PUP 475 Environmental Impact Assessment	3
PUP 510 Citizen Participation	3

\* PUP 301 Introduction to Urban Planning is required. Landscape Architecture students must choose another class with an advisor's approval since PUP 301 is already required for the B.S.L.A.

The minor is automatically open to students from the following majors: Architectural Studies, Civil Engineering, Environmental Resources, Geography, Housing and Urban Development, Landscape Architecture, and Real Estate. Students pursuing other majors will be considered on an individual basis. To pursue a minor in Urban Planning, students must have a minimum cumulative GPA of 3.00. These students must submit a letter of application to the School of Planning and Landscape Architecture seeking approval to enter the minor program.

**GRADUATE PROGRAMS**

The faculty in the School of Planning and Landscape Architecture offer specialization areas in landscape ecological planning, urban and regional development, and urban

design under the Master of Environmental Planning (M.E.P.) degree; the M.S. degree in Environmental Resources; and a collegewide, interdisciplinary Ph.D. degree in Environmental Design and Planning with concentrations in design, history, theory, and criticism; and planning. For more information, see the *Graduate Catalog*.

## ADMISSION

**Lower-Division Program.** New and transfer students who have been admitted to the university and who have selected a program in the School of Planning and Landscape Architecture are admitted to the lower division program. Transfer credits for the lower division program are reviewed by the college and evaluated for applicability to this curriculum. To be applicable, transfer courses must be equivalent in both content and level of offering. A review of samples of work is required for studio classes. See a college academic advisor for an appointment.

Completion of lower division requirements does not ensure acceptance to the upper division professional program. Admission to the upper division is competitive and limited to the space available. Admission requires formal application and acceptance.

**Upper-Division Program.** Admission to the upper division programs of the School of Planning and Landscape Architecture is limited to applicants who have completed the lower-division program requirements and who are determined by the admissions committee to have the best potential for academic success. Spaces in the program are limited by available facilities, faculty, and qualified applicants. A minimum lower division program GPA of 3.00 may be required. See "Application to Upper Division Programs" below.

Students not admitted to upper division programs are not dismissed from the university and may reapply later or may transfer to other programs. Students who plan to reapply should meet with a college academic advisor.

## APPLICATION TO UPPER-DIVISION PROGRAMS

**Upper-Division Application Procedures.** Students should write to a college academic advisor for the application form well in advance of the application deadline. For more information on portfolios, ask for a copy of the *Portfolio Seminar* brochure from a college academic advisor. The following dates and procedures are for students applying to 2000-2001 upper division programs in Urban Planning and Housing and Urban Development. Applicants to the upper division program in Landscape Architecture follow different procedures and have different deadline dates; see an advisor in the advising office for more information.

**Upper-Division Application Deadlines.** April 17, 2001  
Portfolio and application documents are due in the school office by 5:00 P.M.

June 2, 2000 If the spring 2000 semester includes transfer course work (i.e., course work taken at an institution other than ASU), a student must submit his or her transcripts to the school no later than June 2. These transcripts may be unofficial copies. A second set of official transcripts must be

sent to the university Undergraduate Admissions office. Application is not complete until the university receives official transcripts for transfer course work. For those transfer students whose academic term ends in June rather than May, this deadline may be extended upon the written request of the applicant.

July 3, 2000 Acceptance notices are mailed no later than July 3.

**Return of Letter of Acceptance.** A signed receipt of acceptance of admission must be received by the school by the date indicated on the Notice of Acceptance. Alternates may be accepted at a later date if space becomes available.

**Matriculation.** An accepted student is expected to begin his or her upper division professional program at the beginning of the immediate fall term. There is no spring admission to the upper division.

**Portfolio Format Requirements.** Each applicant is responsible for obtaining the following documents and including them in a presentation binder portfolio with plastic sleeves (8.5 x 11 format only) and a label, with the student's name, affixed to the outside:

1. evidence of graphic and design work shown in 35 mm slides or 3 x 5 or other appropriately sized photographs (20 maximum);
2. a statement of intent describing the applicant's specific background and interest in the major;
3. latest college level transcripts; no high school transcripts are required;
4. one example of written work (e.g., a class paper);
5. samples of individual work, team work can be included, but the contribution of the candidate must be clarified;
6. students are strongly encouraged to submit evidence of other endeavors related to the major;
7. the applicant's GPA based on required courses and cumulative GPA is evaluated;
8. students completing the Phoenix Community College (PCC) articulation program with the B.S.D. HUD program should submit similar material from PCC.

**Return of Portfolios.** Application documents remain the property of the School of Planning and Landscape Architecture. However, the remainder of the portfolio is returned after the admissions review, provided the applicant encloses a self-addressed return mailer with sufficient prepaid postage. Portfolios may be claimed in person after August 15, 2000. If the applicant provides written permission, another person may claim the portfolio. After one year, unclaimed portfolios are discarded. While care is taken in handling the portfolios, no liability for lost or damaged materials is assumed by the college or school.

## ADVISING

Advising for the lower division curriculum is provided through a college academic advisor. Advising for the upper division curriculum is provided by the school director and faculty advisors.

**NOTE:** For the General Studies requirement, courses and codes such as L1, N3, C, and H see General Studies page 85. For graduation requirements see University Graduation Requirements page 81. For an explanation of additional non-business courses offered but not listed in this catalog see "Classification of Courses" page 58.

**DEGREE REQUIREMENTS**

The Bachelor of Science in Planning degree requires a total of 120 semester hours

**General Studies Requirement.** The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

**Graduation Requirements.** In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See "University Graduation Requirements," page 81

**Bachelor of Science in Planning,  
Major in Urban Planning**

Lower division courses	61
Upper division courses core	57
Internship	2
<b>Total</b>	<b>120</b>

**Bachelor of Science in Planning,  
Major in Urban Planning  
Lower Division Requirements  
First Year**

**Fall**

ENG 101 First Year Composition . . . . .	3
or ENG 105 Advanced First Year Composition 3 if qualified	
HUD 161 Graphic Communication I . . . . .	3
MAT 117 College Algebra <i>NI</i> . . . . .	3
or approved more advanced <i>NI</i> elective 3	
PUP 100 Introduction to Environmental Design <i>HU G, H</i> . . . . .	3
Approved <i>HU</i> or <i>SB</i> elective . . . . .	3
<b>Total</b> . . . . .	<b>15</b>

**Spring**

ECN 112 Microeconomic Principles <i>SB</i> . . . . .	3
ENG 102 First Year Composition . . . . .	3
or <i>HU</i> elective if ENG 105 is taken 3	
GPH 111 Introduction to Physical Geography <i>S, SB</i> . . . . .	4
Approved <i>HU</i> or <i>SB</i> elective . . . . .	3
Approved <i>SB</i> elective . . . . .	3
<b>Total</b> . . . . .	<b>16</b>

**Second Year**

**Fall**

ADE 120 Design Fundamentals I . . . . .	3
BIO 319 Environmental Science <i>G</i> . . . . .	3
PLA 201 Landscape Architecture and Society . . . . .	3
PUP 261 Urban Planning I . . . . .	4
PUP 301 Introduction to Urban Planning <i>L</i> . . . . .	3
<b>Total</b> . . . . .	<b>16</b>

**Spring**

PUP 264 Urban Planning II . . . . .	4
Approved <i>HU</i> elective . . . . .	3

Approved <i>N2</i> elective . . . . .	3
Approved <i>S1/S2</i> elective . . . . .	4
<b>Total</b> . . . . .	<b>14</b>
Lower division minimum total . . . . .	61

Transfer credits are reviewed by the college and evaluated as applicable to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering.

Portfolio review is required for transfer student work. See a college academic advisor for an appointment.

**Bachelor of Science in Planning,  
Major in Urban Planning  
Upper-Division Professional Program Requirements**

**Third Year**

**Fall**

PUP 322 Planning Method Using Computers . . . . .	3
PLP 361 Urban Planning III . . . . .	5
PUP 412 History of the City <i>H</i> . . . . .	3
PUP 424 Planning Methods . . . . .	3
PUP 442 Environmental Planning . . . . .	3
<b>Minimum total</b> . . . . .	<b>17</b>

**Spring**

GCU 361 Urban Geography <i>SB</i> . . . . .	3
PLP 362 Urban Planning IV . . . . .	5
PUP 420 Theory of Urban Design <i>HU</i> . . . . .	3
PUP 430 Transportation Planning and the Environment . . . . .	3
<b>Total</b> . . . . .	<b>14</b>

**Summer**

PUP 484 Internship . . . . .	12
PLP 485 International Field Studies in Planning and Landscape Architecture (optional) . . . . .	12
<b>Minimum total</b> . . . . .	<b>2</b>

**Fourth Year**

**Fall**

PUP 425 Urban Housing Analysis . . . . .	3
PUP 432 Planning and Development Contract Law . . . . .	3
PLP 452 Ethics and Professional Practice <i>L2</i> . . . . .	3
PUP 461 Urban Planning V . . . . .	5
PLP 498 PS Senior Project . . . . .	1
<b>Total</b> . . . . .	<b>15</b>

**Spring**

PUP 462 Urban Planning VI . . . . .	5
PUP 475 Environmental Impact Assessment . . . . .	3
PUP 494 Environmental Planning Economics . . . . .	3
<b>Total</b> . . . . .	<b>11</b>
Upper division minimum total . . . . .	59
<b>B.S.P. minimum total</b> . . . . .	<b>120</b>

**Bachelor of Science in Landscape Architecture**

Lower division courses . . . . .	64
Upper division courses . . . . .	56
<b>Total</b> . . . . .	<b>120</b>

**General Studies Requirement.** The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

**Graduation Requirements.** In addition to fulfilling college and major requirements, students must meet all university

graduation and other requirements. See "University Graduation Requirements" page 81

**Bachelor of Science in Landscape Architecture  
Lower-Division Requirements**

**First Year**

<b>Fall</b>	
ENG 111 First Year Composition I	3
ENG 112 First Year Composition II	3
ERS 335 Introduction to Environmental Quantity S/S	4
HUC 106 Graphic Communication	3
MAT 111 College Algebra	3
PLA 202 Landscape Architecture and Society	3
<b>Total</b>	<b>16</b>
<b>Spring</b>	
ADE 121 Design in the U.S.	3
ARS 101 Art of the Western World I	3
ENG 111 First Year Composition I	3
GPH 111 Introduction to Physical Geography S/S	4
HIS 100 Western Civilization I	3
<b>Total</b>	<b>16</b>

**Second Year**

<b>Fall</b>	
PLA 266 Landscape Architecture I	4
PLA 294 ST Landscape Structures	3
PLA 303 History of Landscape Architecture I	3
PLB 362 Landscape Plants I	3
PUP 303 Introduction to Urban Planning I	3
<b>Total</b>	<b>16</b>
<b>Spring</b>	
PLA 64 Landscape Architecture II	4
PLA 327 Planning Methods Using Computer	3
PLA 447 Landscape Construction I	3
PUP 101 Introduction to Urban Design	3
Elective	3
<b>Total</b>	<b>16</b>
Lower division total	64

<sup>1</sup> Transfer credit is reviewed by the faculty and evaluated as admissible to this program. To be address the transfer courses multiple courses with content and level of offerings. Portfolio review is required for transfer student work. See a college and major website for appointment.

**Bachelor of Science in Landscape Architecture  
Upper Division Professional Program Requirements**

**Third Year**

<b>Fall</b>	
PLA 361 Landscape Architecture III	5
PLA 394 ST Landscape Architecture	3
PLA 444 Landscape Construction II	3
PUP 427 Theory of Urban Design I	3
<b>Total</b>	<b>14</b>
<b>Spring</b>	
PLA 362 Landscape Architecture IV	5
PLA 627 Landscape Architecture	3

PLA 498 PS Professional Senior Seminar	1
Electives	6
<b>Minimum total</b>	<b>15</b>

**Summer**

P/A 484 Internship (optional)	3
PLA 455 International Field Studies in Planning and Landscape Architecture (optional)	3

**Fourth Year**

<b>Fall</b>	
PLA 461 Landscape Architecture V	5
PLA 494 ST Social Factors in Landscape and Urban Planning	3
PUP 432 Planning and Development Control Law	3
Elective	3
<b>Total</b>	<b>14</b>
<b>Spring</b>	
PLA 443 Landscape Architecture Theory and Criticism	3
PLA 462 Landscape Architecture VI	5
Electives	5
<b>Total</b>	<b>13</b>
Upper division minimum total	56

\* PLA 485 would be used as an elective in the fourth year

Select a minimum of nine semester hours from the elective list

**Electives**

ERS 225 Soils	3
ERS 246 Introduction to the Environmental Science	3
ERS 365 Watershed Management	3
ERS 433 Riparian Ecosystems Management	3
ERS 480 Ecosystem Management and Planning	3
ERS 485 GIS in Natural Resources	3
ERS 486 Remote Sensing in Environmental Resources	4
PLA 359 Resort Planning and Recreation Design	3
PLA 485 International Field Studies in Planning and Landscape Architecture	12
PLA 494 ST Landscape Construction III	3
PLA 494 ST Landscape Ecology and Planning	3
PLA 494 ST Southwest Landscape Interpretation	3
PUP 417 History of the City	3
PUP 433 Zoning Ordinances, Subdivision Regulations and Building Code	3
PUP 442 Environmental Planning	3
PUP 444 Preservation Planning	3
PUP 452 Ethics and Professional Practice I	3
PUP 475 Environmental Impact Assessment	3
PLP 546 Urban Design Policy	3

**Bachelor of Science in Design,  
Major in Housing and Urban Development**

Lower division course	63
Upper division courses	56
Internship	1
<b>Total</b>	<b>120</b>

**NOTE:** For the General Studies requirements and codes such as L1, N3, C and H, see General Studies page 85. For graduation requirements see General Graduation Requirements page 81. For an explanation of additional miscellaneous courses offered but not listed in this catalog, see a catalog of courses page 58.

**General Studies Requirement.** The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

**Graduation Requirements.** In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See "University Graduation Requirements," page 81

**Bachelor of Science in Design,  
Major in Housing and Urban Development  
Lower-Division Requirements**

**First Year**

**Fall**

ECN 202	Microeconomics Principles SB	3
ENG 101	First Year Composition	3
GPH 111	Introduction to Physical Geography S1/S2	4
HUD 161	Graphic Communication I	3
PLP 100	Introduction to Environmental Design <sup>3</sup> HU/G/H	3
Total		16

**Spring**

ECN 111	Macroeconomics Principles SB or any SB elective <sup>3</sup>	3
ENG 102	First Year Composition	3
HUD 201	Introduction to Housing and Urban Development	3
MAT 117	College Algebra NI or MAT 110 Precalculus M/3 or MAT 210 Brief Calculus M/3	3
Approved N3	elective in computers	3
Total		15

**Second Year**

**Fall**

APH 211	Introduction to Architecture HU/G or any CAED history course listed below <sup>3,2</sup>	3
CON 452	Building Construction Methods, Materials, and Equipment	3
PLA 261	Landscape Architecture I... or PLP 261 Urban Planning I-4	4
C/elective		3
N2	statistics elective	3
Total		16

**Spring**

PUP 301	Introduction to Urban Planning LI	3
ACC	elective	3
Natural science	with lab	4
REA	elective	3
Upper division	HUM elective	3
Total		16
Lower division minimum total		63

Transfer credits are reviewed by the college and evaluated as admissible to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering.

See "HU/SB Note"

<sup>3</sup> See the "CAED History Courses"

**HU/SB Note.** Students not taking PUP 100 and APH 200 should note that courses in the humanities and social/behavioral sciences areas must total at least 15 semester hours with at least six semester hours in each area, two courses must be from the same department, at least two departments must be represented in the total selection and at least one course must be in the upper division. Courses chosen must also fulfill one of the following awareness areas: historical (H), global (G), or cultural diversity in the United States (C), all three awareness areas must be fulfilled.

**CAED History Courses.** These CAED history courses also fulfill HU. See the course listings for prerequisites.

APH 311	World Architecture I/Western Cultures HU/G/H	3
APH 315	Contemporary Architecture HU	3
APH 313	History of Western Architecture I L2 HU	3
APH 446	20th Century Architecture I HU	3
DSC 101	Design Awareness HU/G	3
GRA 315	History of Graphic Design HU	3
IND 316	20th Century Design I HU/H	3
INT 223	Interior Design Issues and Theories HU	3
INT 310	History of Interior Design I HU/H	3
INT 311	History of Interior Design II HU/H	3
INT 411	History of Decorative Arts in Interiors HU	3
PUP 200	The Planned Environment HU/H	3
PUP 420	Theory of Urban Design HU	3

**Bachelor of Science in Design,  
Major in Housing and Urban Development  
Upper-Division Requirements**

**Third Year**

**Fall**

CON 383	Construction Estimating 2	3
HUD 301	Housing and Community Design and Development or CON 477 Residential Construction Business Practices	3
HUD 361	Housing and Urban Development Studio I Residential Design and Development	2
HUD 363	Housing and Urban Development Seminar I Residential Design and Development	3
MKT 394	ST: Marketing and Selling	3
Total		14

**Spring**

CON 389	Construction Cost Accounting and Control M/3	3
HUD 302	Housing Production Process	3
HUD 362	Housing and Urban Development Studio II Community Design and Development	2
HUD 364	Housing and Urban Development Seminar II Community Design and Development	3
Approved elective	in computers*	3
Total		14

**Summer**

HUD 484	Internship	
PUP 485	International Field Studies in Planning and Landscape Architecture (optional)	1-12
Minimum total		1

**Fourth Year**

**Fall**

CON 495	Construction Planning and Scheduling M/3	3
HUD 401	Assisted Housing	3
HUD 461	Housing and Urban Development Studio III: Comprehensive Housing Development Process	2

HUD 463	Housing and Urban Development Seminar III Comprehensive Housing Development Process	3
PUP 433	Zoning Ordinances, Subdivision Regulations, and Building Codes or PUP 432 Planning and Development Control Law (3)	3
Total		14
<b>Spring</b>		
HUD 402	Community Revitalization, Problems and Strategies	3
HUD 403	Advanced Topics in Housing and Urban Development	3
HUD 462	Housing and Urban Development Studio IV Neighborhood Revitalization Process	2
HUD 464	Housing and Urban Development Seminar IV: Neighborhood Revitalization Process	3
PUP 452	Ethics and Professional Practice L2	3
Total		14
Upper division minimum total		57
B.S.D. HUD total		120

\* CON 251 Microcomputer Applications for Construction is suggested.

**Bachelor of Science in Environmental Resources**

Lower division courses	61
Upper division courses core	31
Approved electives	28
Total	120

**General Studies Requirement.** The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See "General Studies," page 85, for General Studies requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

**Graduation Requirements.** In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See "University Graduation Requirements," page 81.

**Bachelor of Science in Environmental Resources  
Lower-Division Requirements**

**First Year**

<b>Fall</b>		
BIO 181	General Biology S1/S2	4
ENG 101	First Year Composition or ENG 105 Advanced First Year Composition (3)	3
ERS 130	Soils and Environmental Quality S1/S2	4
Approved N3 computer course <sup>1</sup>		3
Total		14
<b>Spring</b>		
BIO 182	General Biology S2	4
CHM 101	Introductory Chemistry S1/S2	4

ENG 107	First Year Composition or HU elective if ENG 107 is taken (3)	3
HU elective		3
Total		4

**Second Year**

<b>Fall</b>		
BIO 320	Fundamentals of Ecology	3
ECN 111	Macroeconomic Principles SB	3
ERS 227	Soils	3
ERS 226	Soils Laboratory	
ERS 350	Environmental Statistics N2	3
SB course		3
Total		6

<b>Spring</b>		
CHM 231	Elementary Organic Chemistry S1/S2 <sup>2</sup>	3
CHM 235	Elementary Organic Chemistry Laboratory S1/S2 <sup>2</sup>	
ERS 246	Introduction to the Environmental Sciences G	3
MAT 210	Brief Calculus M	3
PLB 310	The Flora of Arizona	4
HU elective		3
Total		17
Lower division minimum total		61

See an advisor

<sup>2</sup> These electives must also satisfy the global, historical, and cultural diversity in the United States awareness areas. Both CHM 231 and 235 must be taken to secure S1 or S2 credit.

**Bachelor of Science in Environmental Resources  
Upper-Division Requirements**

**Third Year**

<b>Fall</b>		
ENG 30	Writing for the Professions L1	3
ERS 360	Range Ecosystem Management	3
ERS 407	Wetland Plants and Habitats	4
Approved elective		4
Total		14

<b>Spring</b>		
ERS 333	Water Resources Management or ERS 365 Watershed Management (3)	3
ERS 402	Vegetation Measurement	4
ERS 475	Wildlife and Range Animal Management	3
Approved electives		6
Total		16

**Fourth Year**

<b>Fall</b>		
ERS 410	Wildlife Habitat Relations or ERS 460 Applied Systems Ecology (3)	4
ERS 490	Recent Advances in Environmental Resources	1
Approved electives		6 or 7
HU or SB elective		3
Minimum total		4

**NOTE:** For the General Studies requirement courses and codes (such as L1, N3, C and H) see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

## Spring

ERS 407 Wildland Plants and Habitats	4 F
PLP 442 Environmental Planning	3
AP 1000	9
Ta	15
Upper level	19
BS LR ta	19

## SCHEDULE

## INQUIRIES

For more information, contact a college academic advisor.

COLLEGE OF ARCHITECTURE AND  
ENVIRONMENTAL DESIGN  
ARIZONA STATE UNIVERSITY  
PO BOX 871605  
TEMPE AZ 85287 1605

## ENVIRONMENTAL DESIGN AND PLANNING (EPD)

See the *Curriculum Catalog* for EPD courses.

## ENVIRONMENTAL RESOURCES (ERS)

## ERS 130 Soils and Environmental Quality. 4 F

Introduction to the physical and chemical properties of soils and the environmental processes that affect them. Prerequisite: CHEM 111 or equivalent.

## ERS 225 Soils. 3 F

Fundamental properties of soils and their relationship to the environment. Prerequisite: CHEM 111 or equivalent.

## ERS 226 Soils Laboratory. 1 F

Selected exercises in soil science. Prerequisite: ERS 225.

## ERS 246 Introduction to the Environmental Sciences. 3 F

Global environmental issues and environmental conservation and management. *General Studies G*.

## ERS 333 Water Resources Management. 3 N

Surface water development and conservation in arid regions for agricultural and domestic uses. Prerequisite: HM 111 or 112.

## ERS 350 Environmental Statistics. 3 F

Statistical methods and applications in environmental management and research. Use of computers and the internet. Prerequisites: SE 8, MAT 7, *General Studies N*.

## ERS 353 Wildlife Nutrition. 3 N

Principles of nutrition and metabolism of wildlife species with emphasis on understanding the relationship between nutrition and environmental health. Prerequisite: BO 181 and 182 and CHM 111 and 231 or instructor approval.

## ERS 360 Range Ecosystem Management. 3 F

Ecological management principles applied to range lands. Herbivory and ecological process evaluation for range land health. Use of range lands. Lecture related. Prerequisites: BO 320 or equivalent. ER 246.

## ERS 365 Watershed Management. 3 N

Hydrological, physical, biological and ecological principles applied to watershed management. Impact of ecosystem management on water yield and quality. 1 weekend field trip. Prerequisites: ERS 225, 246.

## ERS 370 Forest Ecosystem Dynamics. 3 N

Dynamics of forest ecosystem wetland applications from a landscape ecology. Site characteristics and management of multiple use forests. Field trip required. Lecture related. Prerequisites: BO 320, ERS 246, 35.

## ERS 402 Vegetation Measurement. 4 S

Vegetation sampling and data analysis related to land habitat. Lecture related. 1 weekend field trip. Prerequisites: CSE 180 and 181. ERS 350 and 360. A department major or instructor approval.

## ERS 407 Wildland Plants and Habitats. 4 F

The distribution ecology characteristics identification of key plants and values of habitats. Fieldwork and laboratory. Laboratory emphasis on grass identification. Lecture related. Prerequisite: PLB 310 or equivalent.

## ERS 410 Wildlife Habitat Relations. 4 N

Interaction among mammals and their habitat. Systems simulation of population dynamics as influenced by competition and management strategies. Lecture related. 1 weekend field trip. Prerequisite: ERS 360.

## ERS 415 Wildlife Life Histories. 3 S

Life histories of the major mammal reptile amphibian and avian species found in the Southwest with emphasis on management. Lecture related. Prerequisites: BO 370, 385 and ERS 360.

## ERS 420 Ecological Restoration. 3 S

Techniques of ecological restoration applied to the improvement of degraded semi-arid and sensitive habitats. Weekend field trips. Prerequisite: ERS 360.

## ERS 425 Soil Classification and Management. 3 N

Principles of soil morphology and classification. Management and conservation practices will be presented. Prerequisite: ERS 225.

## ERS 433 Rarian Ecosystem Management. 3 N

Examination of the functional components that make up riparian ecosystems and their management. Fieldwork. Lecture related. Prerequisite: ERS 225 or instructor approval.

## ERS 434 Wetlands and Soils. 3 N

Wetlands and ecosystems structure and function. Hydrology and biogeochemistry with special emphasis on soils. Lecture weekend field trip. Prerequisite: ERS 225 or instructor approval.

## ERS 446 Soil Fertility. 3 N

Ability of soils to retain and supply plant nutrients. Reactions of fertilizers. Prerequisites: ERS 225, 226.

## ERS 448 Soil Ecology. 3 N

Soil viewed in an ecosystem context. Soil plant relationships. Nutrient budgets and abiotic factors that influence soil processes. Prerequisites: BO 321 and ERS 225 and 226. Instructor approval.

## ERS 452 Soil, Water and Irrigation. 3 N

Water measurement conveyance and conservation with emphasis on crop production and soil plant water relations. Prerequisite: ERS 225.

## ERS 460 Applied Systems Ecology. 3 N

The systems approach applied to analyze and management of natural resource ecosystems. Semester. 2-hour lecture. 3 hours lab. Prerequisites: ERS 35 or equivalent. 1 course ecology.

## ERS 470 Land Reclamation. 3 N

Problems of reestablishing vegetation on disturbed sites. Specialized revegetation techniques. Surface modification and government regulations. 1 weekend field trip. Prerequisites: ERS 47 and 420 and 446 and 448. Instructor approval.

## ERS 475 Wildlife and Range Animal Management. 3 S

Principles and techniques for management of domestic and nondomestic animals using range and ecosystems. Emphasis on practical applications of management. Weekend field trips. Prerequisite: instructor approval.

## ERS 477 Environmental Risk Assessment and Management. 3 N

Survey of methods related to identification evaluation, comparison and management of environmental risks. Prerequisite: senior standing.

## ERS 480 Ecosystem Management and Planning. 3 S

Planning for management and conservation of wild and ecosystems. Ecological, economic and social constraints on long-term sustainable resource development. Computer use of resource planning. Lecture 1 weekend field trip. Prerequisites: ERS 402 or equivalent. Senior standing. *General Studies L2*.

## ERS 485 GIS in Natural Resources. 3 F

Principles of Geographic Information System. GIS utilized in natural resource management. Use of computer for spatial analysis of natural resources. Lecture related. Prerequisite: CSE 180 or equivalent.

## ERS 486 Remote Sensing in Environmental Resources. 4 S

Principles and applications of remote sensing technologies in natural resource management. Integration of computerized data from aerial photography and Landsat imagery in resource management. Lecture related. Prerequisite: ERS 485 or equivalent.



**ERS 490 Recent Advances in Environmental Resources.** 1) F S  
Current literature and significant developments involving environmental resources. May be repeated for credit

**ERS 533 Riparian Ecology.** 3 N  
Review of recent literature, developments and methods related to riparian ecology. Applications of soil and landscape ecology to riparian systems. Lecture, discussion, field trips

**ERS 540 Plant Responses to Environmental Stresses.** 3 N  
Reaction of plants to environmental stresses: aerobically and anaerobically; herbivores, mechanical treatments, pesticides, and soil amendments. 1 weekend field trip. Prerequisite: ERS 360 or instructor approval

**ERS 548 Plants, Soils, and Environmental Quality.** 3 N  
Effects of air quality on plants and soils and the role of nitrogen removal contaminants from the atmosphere. Prerequisite: ERS 225.

**ERS 550 Vegetation Dynamics Studio.** 4 F  
Dynamics of vegetation emphasizing ecological succession, applications of landscape ecology and GIS, and analysis of vegetation data. Field trips, student research projects, and statistical courses

**ERS 551 Environmental Statistics Studio.** 4 S  
Advanced statistical procedures for environmental resources. Technical questions for analyzing research data that do not meet assumptions. Student. Prerequisite: ERS 35 or equivalent

**ERS 553 Advanced Animal Nutrition.** 4 N  
Metabolic and physiological actions of nutrients in wild and domesticated animals concerning natural feeds. Lecture, lab

**ERS 560 Systems Ecology.** 3 N  
Quantitative description and mathematical modeling of ecosystem structure and function. Technical questions for modeling. Construction and simulation. Lecture, lab. Prerequisites: ERS 350 or equivalent, computer programming. 6 hours of ecological studies

**ERS 585 Spatial Modeling with GIS.** 3 F  
GIS technology for spatial modeling of natural resources. Practical application of GIS technology for problem solving. Lecture, lab. Prerequisites: ERS 485 or equivalent or instructor approval

**HOUSING AND URBAN DEVELOPMENT (HUD)**

**HUD 161 Graphic Communication I.** 3 F  
Development of drawing skills and understanding of the graphic communication systems used by planning, homebuilding, and landscape architecture professionals

**HUD 162 Graphic Communication II.** 3 F S  
Development of sketching techniques and watercolor application used in concept development and final presentation. Prerequisite: HUD 161

**HUD 201 Introduction to Housing and Urban Development.** (3 S)  
Perspectives and issues concerning HUD. Guest lectures by interested community faculty and private public and nonprofit practitioners

**HUD 301 Housing and Community Design and Development.** 3 F  
Single and multifamily housing, residential neighborhoods and planned communities. Affordability, neighborhood and rental housing. First-time mover and adult markets.

**HUD 302 Housing Production Process.** 3 S  
Development, feasibility analysis, finance, contracts, and acquisition, community and permit presentation and negotiation, scheduling, cost control, marketing and sales

**HUD 361 Housing and Urban Development Studio I: Residential Design and Development.** 2 F  
Affordable residential design, development and production process. Student. Prerequisite: HUD 301, 363, upper division HUD major

**HUD 362 Housing and Urban Development Studio II: Community Design and Development.** 2 S  
Neighborhood and new community design and development process. Student. Prerequisite: HUD 301, 361, 363, 364, upper division HUD major

**HUD 363 Housing and Urban Development Seminar I: Residential Design and Development.** 3 F  
Affordable residential design, development and production process. Seminar. Prerequisite: HUD 301, 361, upper division HUD major

**HUD 364 Housing and Urban Development Seminar II: Community Design and Development.** 3 S  
Neighborhood and new community design and development process. Seminar. Prerequisite: HUD 301, 361, 362, 363, upper division HUD major

**HUD 401 Assisted Housing.** 3 F  
Publicly subsidized and nonprofit housing policy implementation, and administrative FHA Section 8/FmHA projects and scatter site and tax considerations

**HUD 402 Community Revitalization: Problems and Strategies.** (3) S  
Public policy and strategies for neighborhood revitalization and community renewal. Preservation and adaptive reuse, gentrification, neighborhood safety, and related socioeconomic concerns

**HUD 403 Advanced Topics in Housing and Urban Development.** 3 F S  
Varying topics such as manufactured housing, homelessness, mortgage and finance in housing, housing abroad, marketing housing and sustainable community development.

**HUD 461 Housing and Urban Development Studio III: Comprehensive Housing Development Process.** 2) F  
Comprehensive development process simulation. Feasibility analysis, finance, design, community and permit presentation, construction, cost management and marketing. Student. Prerequisite: HUD 302, 463, upper division HUD major

**HUD 462 Housing and Urban Development Studio IV: Neighborhood Revitalization Process.** (2) S  
Housing rehabilitation, neighborhood revitalization and urban renewal. CDBG empowerment enterprise zoning, code enforcement, citizen participation, etc. Student. Prerequisite: HUD 401, 402, 464, upper division HUD major

**HUD 463 Housing and Urban Development Seminar III: Comprehensive Housing Development Process.** (3) F  
Comprehensive development process simulation. Feasibility analysis, finance, design, community and permit presentation, construction and cost management and marketing. Seminar. Prerequisite: HUD 302, 461, upper division HUD major

**HUD 464 Housing and Urban Development Seminar IV: Neighborhood Revitalization Process.** 3 S  
Housing rehabilitation, neighborhood revitalization and urban renewal. CDBG empowerment enterprise zoning, code enforcement, citizen participation, etc. Seminar. Prerequisite: HUD 401, 402, 462, upper division HUD major

**HUD 484 Internship.** 1 SS

**LANDSCAPE ARCHITECTURE (PLA)**

**PLA 201 Landscape Architecture and Society.** (3) F  
The relevance of landscape architecture to the creation of humanized environments with emphasis on natural factors

**PLA 261 Landscape Architecture I.** 4 S  
Reading the landscape: observing, experiencing, and graphically expressing the symbolic and aesthetic significance of natural and scapes. Student. Prerequisite: ADE 120, GPA 111.

**PLA 264 Landscape Architecture II.** 4 F  
Landscape communication: communication techniques for urban planning and landscape architecture communication. Prerequisite: ADE 120, PLA/PUP 261

**PLA 294 ST: Landscape Survey Techniques.** (3) F  
Development of landscape survey skills including aerial photography, satellite images, georeferencing and surveys and field data collection

**PLA 310 History of Landscape Architecture.** 3 F  
Physical record of human attitudes toward the land. Ancient through contemporary landscape planning and design. Credits as APH 411. Credit is awarded on year for APH 411 or PLA 310. *General Studies: H*

**PLA 322 Planning Methods Using Computers.** (3) F  
Planning methods using database word processors, spreadsheets, CAD and mapping packages on microcomputers. Lecture, lab. Cross-listed as PUP 322. Credit is awarded on year for PLA 322 or PUP 322.

**NOTE:** For the General Studies requirement courses and credits such as L1, N3, C, and H, see "General Studies" page 85. For graduation requirements, see "University Graduation Requirements" page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Classification of Courses" page 58.

- PLA 359 Resort Planning and Recreation Design.** 3 F  
Interrelationships of social, economic, and physical aspects of total resort design, emphasis on physical development of tourist centers and resort areas
- PLA 361 Landscape Architecture III.** 5 F  
Site planning analysis of natural and cultural features, site systems and implications for planning and design. Studio. Prerequisite: department major or instructor approval
- PLA 362 Landscape Architecture IV.** 5 S  
Site design site specific design of configured space by the creative development of form. Studio. Prerequisite: department major or instructor approval
- PLA 363 Landscape Planting Design.** 3 S  
Function and aesthetic use of plants in landscape design. Design photos are explored through planting design problems. Studio. Prerequisite: PLA/PUP 362 or instructor approval
- PLA 394 ST: Contemporary Landscape Architecture.** 3 F  
Exploration of concerns, projects, and movements in landscape architecture of the late 20th century focusing on understanding of the social, ecological, regional and historical influence
- PLA 420 Theory of Urban Design.** 3 S  
Analysis of the visual and cultural aspects of urban design. Theories and techniques applied to selected study models. Prerequisite: junior or standing. *General Studies: HU*
- PLA 442 Landscape Construction I.** 3 F  
Landscape construction focusing on landform transformations. Topics include landform analysis, grading, and earthwork. Studio. Prerequisite: admission to department's professional level or instructor approval.
- PLA 443 Landscape Architecture Theory and Criticism.** 3 S  
Landscape architecture theories and projects are critically analyzed to evaluate validity of design and contribution to society. Prerequisites: PLA 310, 361, 420. P/P 412
- PLA 444 Landscape Construction I.** 3 F  
Characteristics of materials and methods used in landscape architecture construction. Studio. Prerequisite: PLA 442 or instructor approval.
- PLA 461 Landscape Architecture V.** 5 F  
Landscape ecological planning concept and application of ecological data relevant to planning and design at landscape scale. Studio. Prerequisite: PLA/PUP 362 or instructor approval
- PLA 462 Landscape Architecture VI.** 5 S  
Urban design analysis and design of the contemporary city emphasizing cultural and environmental influences of urban form. Prerequisite: department major or instructor approval
- PLA 484 Internship.** (3) F S SS SS1 on y  
Full-time internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit. Prerequisite: department major or instructor approval
- PLA 485 International Field Studies in Planning and Landscape Architecture.** 1 12 F S SS  
Organized field study of planning and landscape architecture in specified international locations. May be repeated for credit with department approval. Study abroad. Cross-listed as PUP 485. Credit is awarded on y for PLA 485 or PUP 485
- PLA 494 ST: Special Topics.** 3 F S  
a) Landscape Construction 3 S  
Landscape construction focusing on new technology, technical regulations, and experimental techniques or systems  
b) Landscape Ecology and Planning. 3 S  
Landscape ecology examined for its value in the landscape planning process. Review of the evolution of landscape ecology and landscape planning  
c) Social Factors in Landscape and Urban Planning. 3 F  
Examination of the influence of social factors in landscape architecture and urban planning  
d) Southwest Landscape Interpretation. 3 S  
Exploration in methods and implications of landscape interpretation with the American Southwest focusing on how people interpret landscape, the tools they use and how these methods and mechanisms influence and use decisions

**PLA 498 PS: Professional Senior Seminar.** 1 S

**PLA 546 Urban Design Policy.** 3 N

Advanced study of local, state and federal urban design policy. Cross-listed as PUP 546. Credit is awarded on y for PLA 546 or PUP 546. Prerequisite: PLA/PUP 420

## URBAN AND ENVIRONMENTAL PLANNING (PUP)

**PUP 100 Introduction to Environmental Design.** (3) F S

Survey of environmental design, including historical examples and the theoretical, social, technical and environmental forces that shape them. Cross-listed as APH DS 100. Credit is awarded on y for APH 100 or DSC 100 or PUP 100. *General Studies: HU, G, H*

**PUP 200 The Planned Environment.** 3 F

Environmental, aesthetic, social, economic, political and other factors influencing urban development. *General Studies: HU, H*

**PUP 236 Introduction to Computer Modeling.** 3 F S

Fundamentals of computer operation, geographic information systems, geometric modeling of three dimensions, forms and rendering, flight mathematics, modeling of processes using spreadsheets. Lab. Cross-listed as ANP DSC 236. Credit is awarded on y for ANP 236 or DSC 236 or PUP 236. Prerequisite: major in the College of Architecture and Environmental Design. *General Studies: N3*

**PUP 261 Urban Planning I.** (4) F

Reading the landscape, observing, experiencing and graphically expressing the symbolic and aesthetic significance of natural and man-made landscapes. Studio. Prerequisites: ADE 120, GPH 111

**PUP 264 Urban Planning II.** 4 S

Planning communication, communication techniques for urban planning and landscape architecture communication. Prerequisites: ADE 120, PLA/PUP 261

**PUP 301 Introduction to Urban Planning.** (3) F S SS

Theoretical and practical aspects of city planning, interrelationships among physical planning, environment, government and society. *General Studies: L1*

**PUP 322 Planning Methods Using Computers.** (3) F

Planning methods using database, word processors, spreadsheets, CAD and mapping packages on microcomputers. Lecture/lab. Cross-listed as PLA 322. Credit is awarded on y for PLA 322 or PUP 322

**PUP 361 Urban Planning III.** 5 F

Site planning analysis of natural and cultural features, site systems and implications for planning and design. Studio. Prerequisite: department major or instructor approval

**PUP 362 Urban Planning IV.** 5 S

Planning elements and more factors addressed, including and use housing, environment, transportation, circulation, open space, economic development, urban design. Studio. Prerequisite: department major or instructor approval

**PUP 412 History of the City.** 3 F

The city from its ancient origins to the present day. Emphasis on European and American cities during the last five centuries. Cross-listed as APH 414. Credit is awarded on y for APH 414 or PUP 412. *General Studies: H*

**PUP 420 Theory of Urban Design.** 3 F

Analysis of the visual and cultural aspects of urban design. Theories and techniques applied to selected study models. Prerequisite: junior or standing. *General Studies: HU*

**PUP 424 Planning Methods.** 3 F

Tools useful for urban planning research, emphasis on research design and survey methods. Prerequisite: PUP 301 or instructor approval

**PUP 425 Urban Housing Analysis.** 3 F

Nature, dimensions and problems of urban housing, government policy, environment and industry, economics of the housing market

**PUP 430 Transportation Planning and the Environment.** (3) S

Overview of transportation planning from the perspective of, and use of, planning, economic development, environmental planning and social needs. Lecture/discussion. Prerequisite: junior or standing or instructor approval

**NOTE:** For the General Studies requirement, course and codes such as L1, N3, C, and H, see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Classification of Courses," page 58.

**PUP 432 Planning and Development Control Law.** 3 F

Case studies on police power eminent domain zoning subdivisions controls, excus on preservation urban redevelopment and aesthetic and design regulation

**PUP 433 Zoning Ordinances, Subdivision Regulations, and Building Codes.** 3 F S

Analysis of zoning ordinances subdivisions on regulations building codes and other planning implementation technical questions relative to local development

**PUP 442 Environmental Planning.** 3 F

Environmental planning problems including food/pans water quality and quantity solid and hazardous waste air quality and design and noise Fieldtrips Prerequisite PUP 301 or instructor approval

**PUP 444 Preservation Planning.** 3 S

History, theory and principles of historic preservation Emphasis on legal framework and methods practiced Lecture off campus field study Prerequisite instructor approval

**PUP 445 Women and Environments** 3 F

Examines the role women play in shaping the built environment ways built/natural forms affect women's lives Focus on contemporary US examples Prerequisite upper division undergraduate status *General Studies C*

**PUP 452 Ethics and Professional Practice.** 3 F

Ethical problems and issues in planning professional practice and decisions making Prerequisite department major or instructor approval *General Studies L2*

**PUP 461 Urban Planning V.** 5 F

Comprehensive planning coalition and analysis of economic social and environmental data relevant to urban planning; development of and use plans Studio Prerequisite PLA/PUP 362 or instructor approval

**PUP 462 Urban Planning VI.** 5 S

Capstone studio project focusing in synthesis aspects of planning Studio Prerequisite PUP 461 or instructor approval

**PUP 475 Environmental Impact Assessment.** 3 S

Criteria and methods for compliance with environmental laws development of skills and techniques needed to prepare environmental impact statements/assessments

**PUP 484 Internship** 1 12 F, S SS SS1 on y

Fieldtime internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit Prerequisite department major or instructor approval

**PUP 485 International Field Studies in Planning and Landscape Architecture.** 1 12 F, S SS

Organized field study of planning and landscape architecture in specified international locations May be repeated for credit with department approval Study abroad Cross listed as PLA 485 Credit is awarded only for PLA 485 or PUP 485.

**PUP 494 ST: Special Topics.** 3 F S

Environmental Planning Economics

**PUP 498 PS: Senior Pro-Seminar.** 1 F

**PUP 510 Citizen Participation.** 3 S

Theory and practice of citizen participation in planning Examines and critiques participatory techniques and roles of planners. Prerequisite instructor approval

**PUP 520 Planning Theories and Processes.** 3 F

Review of past and current theoretical developments related to social change perspectives the role and ethics of planners Prerequisite instructor approval

**PUP 524 Planning Methods I: Planning Research Methods.** (3 F

Tools useful for urban planning research emphasis on research design and survey methods Prerequisite PUP 301 or instructor approval

**PUP 525 Urban Housing Analysis.** 3 F

Nature dimensions and problems of urban housing, government policy environment, and underlying economic forces of the housing market

**PUP 531 Planning and Development Control Law.** 3 S

Case studies on police power eminent domain zoning subdivisions controls excus on preservation urban redevelopment, and aesthetic and design regulation

**PUP 532 Advanced Urban Planning Law.** 3 S

Advanced study of selected issues in planning law, such as urban design control excus on regulatory practices compensable regulation and tax policy Prerequisite PUP 432 or instructor approval

**PUP 544 Urban Land Use Planning.** 3) F

Theory and methods of urban land use planning, including the raton planning process comprehensive functional and neighborhood plans Prerequisite PUP 301 or instructor approval

**PUP 546 Urban Design Policy.** 3 N

Advanced study of local state and federal urban design policy. Cross-listed as PLA 546 Credit is awarded only for PLA 546 or PUP 546 Prerequisite: PLA/PUP 420.

**PUP 561 Urban Design Studio.** 4 N

Current urban form and urban landscape design problems with the Phoenix centered region Studio Prerequisite PLA/PUP 420 or instructor approval

**PUP 572 Planning Studio I: Data Inventory and Analysis.** 4) F

Comprehensive planning workshop dealing with real community problems Focus on the data gathering and analysis steps of the planning process Prerequisite Master of Environmental Planning major or instructor approval

**PUP 574 Planning Studio II: Options and Implementation.** 4 S

Comprehensive planning workshop dealing with real community problems Focus on the development of options planning and implementation Studio Prerequisite PUP 572 or instructor approval

**PUP 575 Environmental Impact Assessment.** (3 S

Criteria and methods for compliance with environmental laws development of skills and techniques needed to prepare environmental impact statements/assessments

**PUP 584 Internship.** 3 F, S SS SS1 on y)

Internship under the supervision of practitioners in the Phoenix area or other locales Credit/no credit

**PUP 622 Planning Methods II: Quantitative Planning Analysis.** 3 S

Methods and modes used as the basic quantitative techniques of urban regional and environmental planning and policy analysis Prerequisites PUP 424 statistics; instructor approval

**PUP 642 Land Economics** 3) F

land use and locational impact of economic activity and the urban real property market Prerequisite instructor approval

**PUP 644 Public Sector Planning.** 3 S

Urban fiscal problems and public goods provision in state and local governments Prerequisites instructor approval 1 course in macroeconomics

# College of Business

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Larry E. Penley, Ph.D.  
Dean



Business Administration C-Wing

John MacIsaac photo

<b>School of Accountancy and Information Management . . . . .</b>	<b>156</b>
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**PURPOSE**

The mission of the College of Business is to expand the knowledge of business and to educate men and women for managerial leadership through research activities and professional educational programs. These programs address issues of importance to future managers in a world characterized by demands for continuous improvements in quality; growing sophistication of information technology, globalized markets, racial, cultural, and gender diversity in the work force, and a demand for managers with practical, realistic skills.

Students have many opportunities to supplement their academic experiences. The college offers an honors program for academically talented students, an Academic Access Program to assist underrepresented and other targeted students, an international component to provide a variety of international opportunities, an internship program which provides related practical experience, and 18 cocurricular organizations to increase student interaction and learning.

The college is a member of the American Assembly of Collegiate Schools of Business (AACSB), the official accrediting organization in the field of business. The undergraduate and graduate programs and the School of Accountancy and Information Management are accredited by this organization.

The college is host to a chapter of Beta Gamma Sigma, a national society that recognizes high academic achievement in AACSB accredited schools. Selection to Beta Gamma Sigma is the highest scholastic honor a student in business can earn.

In addition to the regular degree curricula, other programs of study in the college are designed to meet special needs. Selected majors are available in the evening and continuing education courses are conducted for qualified persons who are regularly employed and who otherwise would be unable to enroll in college courses. Short courses and institutes on a noncredit basis are organized in cooperation with various business groups for the furtherance of in-service training of employed personnel.

The college works in partnership with the business community, and the board of the Dean's Council of 100 serves as a primary source of advice and counsel for the college. Through the various divisions of the L. William Seidman Institute, the college reaches out to the business community through research and executive education. For more information, visit the college's Web site at [www.cob.asu.edu](http://www.cob.asu.edu).

**ORGANIZATION**

The courses offered by the College of Business are organized into groups so that a related sequence may be established for the various subject fields. For administrative purposes, these fields are organized into the following academic units:

- School of Accountancy and Information Management
- Department of Economics
- Department of Finance
- School of Health Administration and Policy
- Department of Management

- Department of Marketing
- Department of Supply Chain Management

**ADMISSION**

**The Prebusiness Program.** Each student admitted to the College of Business is designated as a prebusiness student. The student follows the freshman and sophomore sequence of courses listed in the curriculum outline. Students are required to follow the recommendations of an academic advisor in completing the prescribed background and skill courses in preparation for the subsequent professional program. The skill courses follow.

ACC 230 Uses of Accounting Information I	3
ACC 240 Uses of Accounting Information II	3
CIS 200 Computer Applications and Information Technology A	3
ECN 111 Macroeconomic Principles SB	3
ECN 112 Microeconomic Principles SB	3
Choose between the course combinations below	6 or 3
ENG 101 First Year Composition 3	
ENG 102 First Year Composition 3	
ENG 105 Advanced First Year Composition 3	
MAT 119 Finite Mathematics VI	3
MAT 211 Brief Calculus VI	3
QBA 221 Statistical Analysis M2	3
<b>Total</b>	<b>27 or 30</b>

Accountancy and Computer Information Systems majors should refer to their specific requirements under the "School of Accountancy and Information Management," page 156, which lists variations in the skill courses.

Completion of lower division requirements does not ensure acceptance to the upper division professional program. Prebusiness students are not allowed to register for 300 and 400 level business courses.

**The Professional Program.** The junior and senior years constitute the professional program of the undergraduate curriculum. Admission to the professional program is competitive and limited by available resources. Admission is awarded to those applicants demonstrating the highest promise for professional success.

Students who wish to apply for the College of Business Professional Program must submit an application during one of the three annual application periods. Candidates are strongly encouraged to visit the Undergraduate Programs Office, BA 123 at the beginning of the semester in which they wish to apply to pick up information regarding academic qualifications, admissions criteria, and application deadlines. The application can be found at the following internet address: [www.cob.asu.edu](http://www.cob.asu.edu). Students are also encouraged to complete the Business Basics workshop before applying to the Professional Program.

**Nonbusiness Students.** A nonbusiness student is permitted to register for selected 300 and 400 level business courses only if, (1) at the time of registration, the student has junior standing (56 semester hours completed) and (2) the student has a minimum cumulative GPA of 2.50 at ASU and a minimum GPA of 2.50 for all business courses completed at

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C and H, see "General Studies," page 85. For graduate requirements, see "University Graduate Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

ASU. Students who have 56 semester hours completed but have never attended ASU are given a one semester period to register and to establish a GPA at ASU. Students must meet all prerequisites and course requirements as listed in the catalog.

Nonbusiness majors are limited to a maximum of 15 semester hours of selected upper division business courses (excluding economics [ECN] courses).

**Bachelor of Interdisciplinary Studies.** A business emphasis is available to Interdisciplinary Studies students who successfully complete 18 semester hours of approved course work. Students may use any one of the existing business minors or certificates as a guide for the business emphasis. Students will select additional Business minor hours to meet the minimum 18 hour requirements. Students may use only one emphasis in business toward the Bachelor of Interdisciplinary Studies. For details, refer to the Bachelor of Interdisciplinary Studies degree in the "Division of Undergraduate Academic Services," page 113.

**Minors.** Two Business minors are available to nonbusiness students—a minor in Business and a minor in Small Business. To complete either of the minors, students must obtain the requirements from the Undergraduate Programs Office in the College of Business and complete the specified business courses with a grade of "C" or higher. Courses used in a student's major may not be used toward a minor. Students are advised to consult an advisor in the colleges of their majors to ensure the proper selection of courses for the minor. The upper division courses for the minor are restricted to students with 56 hours who are in good standing. For details on the minor in Small Business, refer to "Small Business Programs," page 173.

**Nondegree Undergraduate and Graduate Students.** A nondegree undergraduate or graduate student is permitted to enroll in selected 300- and 400-level business courses only during online registration and only if (1) the student has an ASU cumulative GPA of at least 2.50 and an ASU cumulative business GPA of at least 2.50 at the time of online registration or (2) the student has never attended ASU, in which case he or she is given a one semester period to register during online registration and to establish a GPA at ASU. Students must meet all prerequisites and course requirements as listed in the catalog.

Nondegree undergraduate and graduate students are limited to a maximum of 15 semester hours of selected upper division business courses (excluding economics courses).

**ADVISING**

The student should follow the sequence of courses in the "Curriculum Outline" and the recommendations of the academic advisor in completing the prescribed background and skill courses in preparation for the subsequent professional program.

For additional advising information, please visit the Undergraduate Programs Web site at [www.cob.asu.edu/underindexup.htm](http://www.cob.asu.edu/underindexup.htm)

**Curriculum Outline Prebusiness Program**

**First Year**

**First Semester**

ECN 111 Microeconomic Principles SB	3
or ECN 112 Microeconomic Principles SB	3
ENG 101 First Year Composition	3
MAT 119 Finite Mathematics VI	3
General Studies	3
PGS or SOC course	3
<b>Total</b>	<b>15</b>

**Second Semester**

COM 100 Introduction to Human Communication SB	3
or COM 230 Small Group Communication SB	3
or COM 259 Communication in Business and the Professions	3
ECN 112 Microeconomic Principles SB	3
or ECN 111 Microeconomic Principles SB	3
ENG 102 First Year Composition	3
MAT 210 Brief Calculus VI	3
Laboratory Science SI/S2	4
<b>Total</b>	<b>16</b>

**Second Year**

**Third Semester**

ACC 230 Uses of Accounting Information I	3
QBA 221 Statistical Analysis N2	3
General Studies	3
Laboratory Science SI/S2	4
PGS or SOC course	3
<b>Total</b>	<b>16</b>

**Fourth Semester**

ACC 240 Uses of Accounting Information II	3
CIS 200 Computer Applications and Information Technology N3	3
General Studies	9
<b>Total</b>	<b>5</b>
<b>Prebusiness program total</b>	<b>67</b>

Accountancy and Computer Information Systems majors should refer to their specific course requirements under the "School of Accountancy and Information Management," page 156, which lists course requirement variations.

Students are encouraged to have College Algebra (MAT 117) proficiency before registering in ECN 111 and 112. ECN 111 and 112 may be taken during the second and third semesters without any delay in the prebusiness program.

**Professional Program.** Students admitted to the professional program should select the necessary upper division business courses to complete the major by consulting their departmental advising guide and faculty advisor. Professional program students must complete BUS 301 and COB 301 during their first semester in the professional program.

**Transfer Credit.** Credit from other institutions is accepted subject to the following guidelines. Students planning to

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C, and H) see General Studies, page 85. For graduate course requirements see University Graduate Requirements, page 81. For an explanation of additional omnibus courses (where but not listed in this catalog) see Classification of Courses, page 58.

## College of Business Baccalaureate Degrees and Majors

Major	Degree	Administered by
Accountancy	B.S.	School of Accountancy and Information Management
Computer Information Systems	B.S.	School of Accountancy and Information Management
Economics	B.S.	Department of Economics
Finance	B.S.	Department of Finance
Management	B.S.	Department of Management
Marketing	B.S.	Department of Marketing
Real Estate	B.S.	Department of Supply Chain Management
Supply Chain Management	B.S.	Department of Supply Chain Management

take their first two years of work at a community college or another four year college should take only those courses in business and economics that are offered as freshman or sophomore level courses at any of the state supported Arizona universities. These lower division courses are numbered 100 through 299. *A maximum of 30 hours of business and economics courses from community colleges are accepted toward a bachelor's degree in business.*

Students may transfer a maximum of nine semester hours of approved upper division business course work required for the business degree to ASU Main. Professional business courses taught in the junior or senior year in the state universities may not be completed at a two year college for transfer credit in the business core or major. The introductory course in the legal, ethical, and regulatory issues in business is accepted as an exception to this policy, but only lower division credit is granted. Such courses may be utilized in the free elective category *subject to the 30 hour limitation*. Courses taught as vocational or career classes at the community colleges that are not taught in the colleges of business at any one of the state universities are not accepted for credit toward a bachelor's degree. Courses taught in the upper division business core at the state universities must be completed at the degree granting institution unless transferred from an accredited four year school. Normally, upper division transfer credits are accepted only from AACSB accredited schools. To be accepted for credit as part of the professional program in business, all courses transferred from other institutions must carry prerequisites similar to those of the courses they are replacing at ASU.

A Transfer Partnership Degree is available to Maricopa community college students who wish to complete their first two years of course work at a Maricopa community college and transfer to the College of Business without loss of credit. An Associate of Business degree is available to students who wish to complete their first two years of course work at an Arizona community college and transfer to the College of Business without loss of credit. Students should consult with an academic advisor in the Undergraduate Programs Office to plan curriculum requirements.

## DEGREES

The faculty in the College of Business offer the B.S. degree in Accountancy, Computer Information Systems, Economics, Finance, Management, Marketing, Real Estate, and Supply Chain Management upon successful completion of a four year curriculum of 120 semester hours. Students may select one of the majors shown in the "College of Business Baccalaureate Degrees, Majors, and Concentrations"

table. Each major is administered by the academic unit indicated.

## GRADUATE PROGRAMS

The faculty in the College of Business offer graduate degrees as shown in the "College of Business Graduate Degrees and Majors" table, page 152. Students have the opportunity to obtain dual degrees in two years with several master's degree programs in the College of Business, including these examples:

M.B.A./M.H.S.A.  
M.B.A./M.S.I.M.  
M.B.A./M.Acc.  
M.B.A./M.S. in Economics  
M.B.A./M.Tax.

Other concurrent degrees available are as follows:

M.B.A./J.D.  
M.B.A./Master of Architecture  
M.B.A./M.I.M. with American Graduate School of International Management (Thunderbird), Glendale, AZ; ESC Toulouse, Toulouse, France; Universidad Carlos III, Madrid, Spain; and ITAM and ITESM CEM, Mexico City, Mexico.

In addition to the full time M.B.A. program, the evening M.B.A. program offers a technology M.B.A. at ASU Research Park and an evening M.B.A. at the ASU Downtown Center.

The Executive M.B.A. program is available to those with significant work experience.

For more information about M.B.A. programs, refer to the *Graduate Catalog*.

## UNIVERSITY GRADUATION REQUIREMENTS

In addition to fulfilling college and major requirements, students must meet all university graduation requirements. For more information, see "University Graduation Requirements," page 61.

### General Studies Requirement

All students enrolled in a baccalaureate degree program must satisfy a university requirement for a minimum of 35 hours of approved course work in General Studies, as described under the "General Studies," page 65.

Note that all three General Studies awareness areas are required.

General Studies courses are listed under the "General Studies" section in the course descriptions, in the *Schedule of Classes*, and in the *Summer Sessions Bulletin*.

### College of Business Graduate Degrees and Majors

Major	Degree	Administered by
Accountancy	M. Acc.	School of Accountancy and Information Management
Business Administration	M.B.A.	College of Business
Business Administration Concentrations: accountancy, finance, health services research, information management management, marketing, supply chain management	Ph.D.	College of Business
Economics	M.S., Ph.D	Department of Economics
Health Services Administration	M.H.S.A.	School of Health Administration and Policy
Information Management	M.S.	School of Accountancy and Information Management
Statistics	M.S.-	Committee on Statistics
Taxation	M.Tax	School of Accountancy and Information Management

<sup>1</sup> Applications are not being accepted at this time.

<sup>2</sup> This program is administered by the Graduate College. See "Graduate College," page 30.

#### First-Year Composition Requirement

Completion of both ENG 101 and 102 or ENG 105 with a grade of "C" or higher is required for graduation from ASU in any baccalaureate program.

#### COLLEGE DEGREE REQUIREMENTS

College degree requirements supplement the General Studies requirement with additional course work from the list of approved courses. Business courses may not be used to fulfill college degree requirements except for ECN 111 and 112 and QBA 221.

A well planned program of study may enable students to complete many General Studies and college degree requirements concurrently. Students are encouraged to consult with an academic advisor in planning a program to ensure that they comply with all necessary requirements.

Specific courses from the following areas must be taken to fulfill the college degree requirement.

**Social and Behavioral Sciences.** College of Business students must complete ECN 111 and 112, one course with a PGS prefix, one course with an SOC prefix, and may include these courses toward the General Studies requirements.

**Science and Mathematics.** College of Business students must complete MAT 119 and MAT 210 (or a more advanced MAT course), QBA 221, and may include these courses toward the General Studies requirements.

**Communication.** All students in the College of Business except Accountancy majors must complete COM 100, 230, or 259. Accountancy majors must complete COM 230 (or 100) and 259.

**Additional Courses.** Additional courses, as needed to complete 60 hours (54 hours for Accountancy majors), may be selected from the General Studies areas (see "General Studies Courses," page 87) or from the College of Business Policy Statement. Students are encouraged to consult with an academic advisor to ensure that they comply with all necessary requirements. Business courses may not be used to fulfill this requirement except for ECN 111 and 112 and QBA 221.

#### Additional Graduation Requirements

In addition to completion of courses outlined under "Major Requirements," page 153, to be eligible for the B.S. degree in the College of Business, a student must

1. have completed at least 30 semester hours at ASU Main;
2. have attained a cumulative GPA of 2.00 or higher for all courses taken at this university, for all business courses taken at this university, and for all courses for the major taken at this university;
3. have earned a "C" or higher in each course in the business core and each course in the major;
4. have earned a minimum of 51 semester hours in traditional courses designed primarily for junior or senior students and completed in an accredited, four-year institution; and
5. have met all university degree requirements.

**Exceptions.** Any exception to these requirements must be approved by the Standards Committee of the College of Business.

**Declaration of Graduation.** A student in a professional program must complete a declaration of graduation during the semester in which the student completes 87 semester hours. The Degree Audit Reporting System should be used to guide the student in accomplishing successful completion of degree requirements in a timely manner. Students who have not met this requirement are prevented from further registration. Some students may be required to complete a Program of Study in place of the Declaration of Graduation. Students should consult their advisors for the proper procedure.

#### Pass/Fail

Business majors may not include among the credits required for graduation any courses taken at this university on a pass/fail basis. Pass/fail credits taken at another institution may be petitioned for use, but only if the student can demonstrate proof that the pass grade was equivalent to a "C" or higher.



**MAJOR REQUIREMENTS**

Students seeking a B.S. degree in the College of Business must satisfactorily complete a curriculum of 120 semester hours.

A major consists of a pattern of 18-24 semester hours in related courses falling primarily within a given subject field. Available majors are shown in the "College of Business Baccalaureate Degrees and Majors" table, page 151.

**Major Proficiency Requirements.** Students must receive grades of "C" or higher in upper division courses for the major. If a student receives a grade below "C" in any course in the major, this course must be repeated. If a second grade below "C" is received in either an upper division course in the major already taken or in a different upper division course in the major, the student is no longer eligible to take additional upper division courses in that major.

**Business Core Requirements**

To obtain an understanding of the fundamentals of business operation and to develop a broad business background, every student seeking a B.S. degree in the College of Business must complete the following courses:

<b>Lower-Division Business Core</b>	
ACC 230 Uses of Accounting Information I	3
ACC 240 Uses of Accounting Information II	3
CIS 200 Computer Applications and Information Technology	3
Lower division business core total	9
<b>Upper-Division Business Core</b>	
BUS 301 Fundamentals of Management I	3
COB 301 Business Fundamentals I	1
FIN 301 Fundamentals of Finance	3
LES 305 Legal, Ethical and Regulatory Issues in Business	3
MGT 301 Management and Organizational Behavior	3
MKT 301 Principles of Marketing	3
OPM 301 Operations and Logistics Management	3
International business course	3
Upper division business core total	22
Business core total	31

Accountancy and Computer Information Systems majors should refer to their specific requirements under the "School of Accountancy and Information Management," page 156, which lists variations in the business core courses.

**Core Proficiency Requirement.** Students must receive grades of "C" or higher in upper division business core courses to graduate. If a student receives a grade below "C" in any of these courses, the course must be repeated. University policy states a course may be repeated only one time.

**Elective Courses**

Sufficient elective courses are to be selected by the student to complete the total (120) semester hours required for graduation.

**ACADEMIC STANDARDS**

**Probation.** All students freshman through senior must maintain a minimum GPA of 2.0 for all courses completed at ASU. If these standards are not maintained, the student is placed on probation. Students on probation must attend an Academic Success Workshop.

**Disqualification.** A student who is on probation becomes disqualified if (1) the student obtains a semester GPA below 2.50 or receives a grade below "C" in one or more courses or if (2) the student has not returned to good standing by the end of two consecutive semesters on probation.

Students who have been academically disqualified are not permitted to enroll in upper division business courses during summer sessions.

**Reinstatement and Readmission.** Students seeking reinstatement after disqualification or readmission after an absence from the university should contact the Undergraduate Programs Office regarding procedures and guidance for returning to good standing.

**Academic Dishonesty.** The faculty of the College of Business follows the guidelines in the Student Academic Integrity Policy on academic dishonesty. A copy of the policy may be obtained in the Undergraduate Programs Office.

**Student Appeal Procedure on Grades.** The faculty of the College of Business have adopted a policy on the student appeal procedure on grades. A copy of the policy may be obtained in the Undergraduate Programs Office.

**SPECIAL PROGRAMS**

**Academic Access Program.** The primary mission of the Academic Access Program (AAP) is to help the underrepresented and other targeted student populations of the College of Business successfully navigate the college's rigorous academic demands. To that end, the office manages a number of programs to assist students. Some of the programs are:

- Advising
- Advising ethnic student business organizations
- Mentoring
- Ongoing seminar and workshop series on study and work issues and strategies
- Referring students to other campus support offices
- Retention
- Teaching Academic Success courses COB 294 and 304
- Tutoring

Students can visit the office in BA 172, call 480-965-4066, or access the college's Web site at [www.cob.asu.edu/aap](http://www.cob.asu.edu/aap).

**Asian Studies.** Students in the College of Business may pursue a program with an emphasis in Asian studies as part of the B.S. degree requirements in business. At least 3 upper division semester hours of the program must be in Asian studies content courses. Reading knowledge of an Asian language is required. The Asian studies content program must be approved by the Center for Asian Studies (see "Asian Studies," page 331, Fulfillment of requirements).

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C and H, see General Studies, page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional business courses offered but not listed in this catalog, see "Class of Additional Courses," page 58.

is recognized on the transcript as a bachelor's degree with a designation of the Asian studies discipline. It is possible to complete the certificate program in International Business Studies and the Asian studies emphasis concurrently. For further information, contact the Center for Asian Studies in West Hall 109 or call 480 965 7184.

**Certificate in Small Business and Entrepreneurship.** A curriculum in small business and entrepreneurship is available to business majors at ASU. See "Small Business Programs," page 173.

**Certificate in International Business Studies.** See "International Business Studies," page 164, for the requirements of this certificate.

**Certificate in Quality Analysis.** The program of study leading to the Certificate in Quality Analysis prepares students to perform technical analyses associated with quality measurement and improvement of manufacturing and service processes. Graduates with the ability to implement these analyses are in high demand in the marketplace. This program is not a substitute for the listed areas of business specialization; rather, the courses required for the certificate add quantitative strength and implementation skills for quality tools to the student's chosen field of specialization.

Students are required to complete a bachelor's degree from any of the major fields of study at ASU and to complete a minimum of 15 semester hours of approved course work, including the following nine hours:

QBA 321 Applied Quality Analysis I L2	3
QBA 421 Applied Quality Analysis II	3
QBA 451 Operations and Process Analysis L2	3

To complete the certificate, the student selects at least six additional hours of course work related to quality analysis approved in advance by the advisor for the certificate program. The student must also complete the 15 hours of course work with a minimum GPA of 2.50.

**Honors Program.** College of Business students who have been admitted to the University Honors College and the professional program are eligible to participate in the Business Honors Program.

The Business Honors Program provides opportunities for academically talented undergraduate business students to interact with other leading students, faculty, and business professionals inside and outside the classroom. The result is a challenging and enriched education experience that is valuable for professional career or graduate work.

To be admitted into the Business Honors Program students must meet the following criteria:

1. be enrolled in the University Honors College,
2. have a cumulative GPA of 3.40 or higher,
3. be admitted into the college's professional program, and
4. have sufficient time to complete the honors requirements.

Upon acceptance into the program, a valuable learning experience begins. The honors course work consists of HON 171 and 172 The Human Event or HON 394 ST: Selected Topics and an additional 18 semester hours of

upper division honors courses, including the following six semester hours:

COB 301 Business Forum	1
COB 492 Honors Directed Study	1
COB 494 ST Honors Research	1
493 Honors Thesis*	3

\* See "Honors Courses," page 58, for an explanation of this course.

The ASU Honors Curriculum normally allows students to complete all requirements within the 120 semester hours of credit required for graduation. All courses taken for honors credit count toward graduation even if the student does not graduate from the University Honors College.

The Business Honors Program emphasizes activities beyond the normal classroom setting in order to broaden the educational experience. Such activities include special honors scholarships, student/faculty mixers, and professional seminars and panel discussions. Students are also encouraged to participate in the Mentoring Program, which allows students the opportunity to interact with local business professionals.

An academic advisor is assigned strictly to assist honors students in course selection, to monitor progress toward the honors recognition, and to be actively involved in career and educational guidance upon completion of the degree.

While the program focuses on students in the professional program, freshman and sophomore honors students are offered break-out sections in core classes, are invited to attend selected events, and can be assigned a junior or senior honors mentor.

For more information see "University Honors College," page 316, call 480/965 8710, fax 480/965 3846, or stop by the Honors Program Office located in BAC 226. Additional information may be obtained by visiting the Honors College's Web site at [www.cob.asu.edu/HON](http://www.cob.asu.edu/HON). Interested students should also contact the University Honors College at 480/965 2359.

**Internships.** The college encourages students to complement their academic program with career-related work. This practical experience gives students a distinct advantage in the job market when seeking their first full-time professional positions. Additional benefits include industry contacts, a deeper understanding of career options, and monetary compensation that helps students finance their education.

Formal internships and co-ops offer professional work experience and experiential learning opportunities that enrich the student's academic preparation. Students may do internships in the summer or part-time during semesters. Co-op positions are full-time and require a one-semester or longer break in school attendance. The college provides guidelines to companies and encourages them to sponsor internship and co-op positions that benefit both the firm and the student. This is accomplished by building positions around projects and challenging responsibilities that enable students to apply learning acquired in advanced business classes.

ASU Career Services and the College of Business work cooperatively to help students identify and obtain career-related work. The process of obtaining internships and co-ops is a learning opportunity. Students use the same job

search skills and resources that are utilized to obtain permanent career positions. Informational materials, workshops, and required class activities help students learn job search and career exploration skills, and locate internship and co-op opportunities.

Students may earn academic credit for internship experience. Several academic units within the college offer internship courses. Work assignments for these courses must be approved in advance by a designated faculty member and all internship courses include an academic component.

For additional information, visit the Undergraduate Internship coordinator at BA 122-481-965-4066, faculty advisors in the departments or Career Services, or access the College of Business Web site at [www.cob.asu.edu/up/index.upo.htm/#services](http://www.cob.asu.edu/up/index.upo.htm/#services)

**Latin American Studies Center.** Students in the College of Business may pursue a program with an emphasis in Latin American area studies. For additional information on this program, contact the Latin American Studies Center in SS 213 or call 480-965-5127

**Prelaw Studies.** Prelaw students may pursue a program of study in the College of Business. Courses in accounting, economics, finance, insurance, labor relations, and statistics are recommended for any student planning to enter the legal profession.

The admission requirements of colleges of law differ considerably. The student should communicate with the dean of the law school the student hopes to attend and should plan a program to meet the requirements of that school. Most law schools, including the ASU College of Law, require a baccalaureate degree for admission.

Students who plan to complete a bachelor's degree before entering law school may follow any field of specialization in the College of Business. Within the College of Business are faculty members who are lawyers and who serve as advisors for students desiring a prelaw background.

## RESEARCH CENTERS

### L. William Seidman Research Institute

The College of Business has eight research centers operating under the umbrella of the L. William Seidman Research Institute. The following centers provide support for faculty research, give opportunities for advanced graduate students' involvement with faculty, and provide information and assistance to the business community on a wide variety of subjects:

- Arizona Real Estate Center
- Bank One Economic Outlook Center
- Center for Advanced Purchasing Studies
- Center for the Advancement of Small Business
- Center for Business Research

- Center for Services Marketing and Management
- Center for the Study of Finance
- Joan and David Lincoln Center for Applied Ethics

The Seidman Research Institute's mission is to encourage and support applied business research by serving as a public access point to the College of Business, by supporting faculty and student research, by transferring new knowledge to the public, by encouraging the development of education programs grounded in applied business research, and by conducting high quality, applied business research.

The institute increases the level of funded research by adding support services to facilitate grant preparation and assistance in grant administration and by facilitating the mission of research centers as liaisons between faculty and businesses. In addition, the institute provides desktop publishing services.

For more information, contact the director at the L. William Seidman Research Institute, BA 319, 480/965-5362. The institute's Web site is [www.cob.asu.edu/seid](http://www.cob.asu.edu/seid).

## COLLEGE OF BUSINESS (COB)

**COB 294 ST: Special Topics.** 1-4 F S

**COB 300 Integrative Business Foundations.** 3 F S SS

A strategic integrative foundation of key business issues covering a disciplines issues include diversity ethics globalization interpersonal skills and quality. Must be taken in the first semester of the professional program for business students. Lecture/lab *General Studies*. L2

**COB 301 Business Forum.** 1 F S, SS

Provides professional program business students with information on careers interviewing job hunting and resume skills. Must be taken in the first semester of the professional program for business students. Prerequisite: professional program business student

**COB 380 Small Business Leadership.** 3 F S

Develops leadership skills needed to form lead, and operate a small business. Emphasizes innovation, research and problem solving. Team teaching, collaborative learning

**COB 381 Small Business Accounting and Finance.** 3 F S

Accounting and finance skills needed by a small business to acquire, allocate and track monetary resources and evaluate performance. Team teaching collaborative learning. Prerequisite: COB 380

**COB 382 Small Business Sales and Market Development.** 3 F S

Building and maintaining customers: developing a market persona, a niche and the importance of sales. Team teaching collaborative learning. Prerequisite: COB 380

**COB 383 Small Business Working Relationships.** 3 F S

Addresses communication and the people in a business—customers/clients employees suppliers providers, competitors governments family and self development. Team teaching collaborative learning. Prerequisite: COB 380

**COB 384 Small Business Operations and Planning.** 3 F S

Planning and executing plans: the what, when, where, how and who from product/service project idea to pay back or competition. Team teaching, collaborative learning. Prerequisite: COB 380

**COB 394 ST: Special Topics.** 1-4 F S

**COB 492 Honors Directed Study.** 1 F, S

**COB 494 ST: Special Topics.** 1 F S

(a) Honors Research

**NOTE:** For the General Studies requirement, courses and codes (such as L1-N3-C and H) see "General Studies" page 85. For graduation requirements see "University Graduation Requirements" page 81. For an explanation of additional omnibus courses offered but not listed in this catalog see "Classification of Courses" page 58.

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## School of Accountancy and Information Management

**Philip M.J. Reckers**  
*Director*  
 (BA 223) 480/965-3631  
 Fax 480/965-8392  
[www.cob.asu.edu/acct](http://www.cob.asu.edu/acct)

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### PROFESSORS

J.R. BOATSMAN, BOYD, FLAHERTY, JOHNSON, KAPLAN,  
 PANY, PHILIPPAKIS, RECKERS, RENEAU, SCHULTZ,  
 SHRIVER, R. SMITH, STEINBART, TIDWELL, WYNDELTS

### ASSOCIATE PROFESSORS

CHRISTIAN, GOLEN, GOUL, GUPTA, KEIM, KIANG,  
 KULKARNI, MOECKEL, O'DELL, O'LEARY, PEI, REGIER,  
 ROY, ST. LOUIS, VINZE

### ASSISTANT PROFESSORS

CHEN, CHENOWETH, DAVID, DOWLING, HWANG, IYER,  
 MISHRA, SANTANAM, K. SMITH, WHITECOTTON

### SENIOR LECTURERS

MACCRACKEN, SHREDNICK

### LECTURERS

BALOGH, J.L. BOATSMAN, GEIGER, HAYES, TAYLOR

The School of Accountancy and Information Management houses separate undergraduate degree programs in

Accountancy and Computer Information Systems. The school also offers a dual degree program in which students complete requirements for both degree programs (Accountancy and Computer Information Systems) simultaneously. For more information on courses, faculty, and programs, visit the school's Web site.

### ADMISSIONS

The School of Accountancy and Information Management follows the College of Business policies and procedures for admission to its undergraduate professional programs in Accountancy, Computer Information Systems, and the dual degree program of Accountancy and Computer Information Systems.

To be considered for admission to the Accountancy major, a student must meet the College of Business admission requirements and have a grade of "B" or higher in both ACC 230 and 240 or their equivalents.

To be considered for admission to the Computer Information Systems major, a student must meet the College of Business admission requirements and have a grade of "C" or higher in CSE 100 or its equivalent.

Due to resource limitations, admission to all of the school's programs is very competitive. Approximately one third of all applicants who apply to the professional programs in Accountancy and Computer Information Systems may be admitted. Applicants are reviewed using a portfolio approach. Among the factors considered are: cumulative GPA, skill course GPA, transfer GPA and institution (if applicable), work experience, demonstrated community involvement and leadership skills, and responses to questions located in the professional program application. For



Active team participation and hands-on projects help College of Business students understand the value of collective thinking.

Jeff Havir photo

current admission statistics for each program, please contact the Undergraduate Programs Office in the College of Business.

**ACCOUNTANCY**

The major in Accountancy includes the essential academic preparation for students

1. pursuing professional careers in public, corporate, and governmental accounting;
2. seeking positions in consulting; or
3. planning to operate their own businesses.

The major in Accountancy consists of the following courses:

ACC 330 Enterprise Process Analysis and Design L1	4
ACC 340 External Reporting I	4
ACC 350 Internal Reporting	4
ACC 430 Taxes and Business Decisions L2	4
ACC 440 External Reporting II	4
ACC 450 Principles of Auditing	4
<b>Total</b>	<b>24</b>

As part of the requirements, all Accountancy majors must complete the following courses:

ACC 250 Introductory Accounting Lab	1
CIS 220 Programming Concepts for Accountancy Majors	3
CIS 335 Visual Paradigms for Information Systems Development	3
CIS 420 Business Database Concepts	3
COM 100 Introductory Human Communication SB or COM 230 Small Group Communication SB	3
COM 259 Communication in Business and the Professions	3
ECN 306 Survey of International Economics SB G*	3
ENG 301 Writing for the Professions L	3
<b>Total</b>	<b>22</b>

\* This course may be counted in the business core as an international business course.

**COMPUTER INFORMATION SYSTEMS**

The major in Computer Information Systems prepares students for professional careers involving the analysis, configuration, programming, and database aspects of the design and implementation of computerized business information systems. The course work prepares the student for a career in business information systems and for admission to graduate programs in information systems or information management.

The major in Computer Information Systems consists of the following courses:

ACC 330 Enterprise Process Analysis and Design L1	4
CIS 335 Visual Paradigms for Information Systems Development	3
CIS 410 Object Oriented Modeling and Programming	3
CIS 420 Business Database Concepts	3

CIS 430 Networks and Distributed Systems	3
CIS 440 Systems Design and Electronic Commerce	3
<b>Total</b>	<b>19</b>

All Computer Information Systems majors must complete CSE 100 Principles of Programming (N3) or a C or C++ programming language course, which may be used as a college requirement, and CIS 235 Business Information Systems Development, which may be used in the business core in place of CIS 200.

**MAJOR PROFICIENCY REQUIREMENTS**

In addition to college and university requirements, Accountancy and Computer Information Systems majors must receive grades of "C" or higher in the required upper division major and major support courses. If a student receives a grade below "C" in any required upper division major course, this course must be repeated before any other upper division major course can be taken. If a second grade below "C" is received in either an upper division major course already taken or in a different upper division major course, the student is no longer eligible to take additional upper division major courses.

**GRADUATION REQUIREMENTS**

In addition to fulfilling major requirements, students seeking a degree must meet all university and college requirements. See "University Graduation Requirements," page 81 and "College Degree Requirements," page 152

**ACCOUNTANCY (ACC)**

**ACC 230 Uses of Accounting Information I.** (3) F S SS  
Introduction to the uses of accounting information on focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes. Prerequisite: sophomore standing.

**ACC 240 Uses of Accounting Information II.** (3) F S SS  
Introduction to the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes. Prerequisites: ACC 230; sophomore standing.

**ACC 250 Introductory Accounting Lab.** (1) F S SS  
Procedural details of accounting for the accumulation of information and generation of reports for internal and external users. Lab. Prerequisites: ACC 230; sophomore standing.

**ACC 315 Financial Accounting and Reporting.** (3) F, S  
Accounting theory and practice related to uses of financial statements by external decision makers. Prerequisites: ACC 240-250 non-Accountancy major.

**ACC 316 Management Uses of Accounting.** (3) F, S  
Uses of accounting information for managerial decision-making budgeting and control. Prerequisites: ACC 240 non-Accountancy major.

**ACC 330 Enterprise Process Analysis and Design.** (4) F, S, SS  
Analysis and design of efficient and effective business processes. Emphasizes taking advantage of new information technologies to improve managerial decision-making. 3 hours lecture 3 hours lab. Prerequisite: professional program business student majoring in Accountancy or Computer Information Systems. *General Studies: L1*

**ACC 340 External Reporting I.** (4) F S SS  
Financial accounting theory and practice related to external reporting. 3 hours lecture 3 hours lab. Prerequisite: professional program business student majoring in Accountancy. Prerequisites: FIN 300; professional program business student majoring in Accountancy. Prerequisites with a grade of "C" or higher: ACC 250-330.

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C and H, see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Classification of Courses," page 58.

**ACC 350 Internal Reporting.** 4 F S SS

Internal reporting systems for planning, control, and decision making. 3 hours lecture, 3 hours lab. Prerequisite: professional program business student majoring in Accountancy. Prerequisites: OPM 301 professional program business student majoring. A continuity prerequisite with a grade of C or higher. ACC 250, 330.

**ACC 394 ST: Special Topics.** 3 F S

Financial Analysis and Accounting for Small Business.

**ACC 430 Taxes and Business Decisions.** 4 F S, SS

Federal income tax and other property tax provisions for corporations, individuals, and trusts with an emphasis on tax consequences of business and investment decisions. 3 hours lecture, 3 hours lab. Prerequisites: LES 305, professional program business student majoring. Accountancy Prerequisite with a grade of C or higher. ACC 340. *General Studies L2*.

**ACC 432 Problems in Managerial Accounting.** 3 N

Cases and computer applications in decision making and control and capital budgeting. Prerequisite: professional program business student majoring. Accountancy Prerequisite with a grade of C or higher. ACC 350.

**ACC 440 External Reporting II.** 4 F S SS

Continuation of ACC 340 External Reporting with emphasis on the recognition of research and resolution of financial reporting issues. 3 hours lecture, 3 hours lab. Prerequisite: professional program business student majoring in Accountancy. Prerequisite with a grade of C or higher. ACC 34.

**ACC 450 Principles of Auditing.** 4 F S

Standards and procedures in auditing. Planning, evidence gathering, and accumulation, and reporting. Ethical and legal considerations. 3 hours lecture, 3 hours lab. Prerequisite: professional program business student majoring in Accountancy. Prerequisite with a grade of C or higher. ACC 440.

**ACC 452 Advanced Taxation.** 3 N

Advanced problems in business and fiduciary income tax, estate and gift tax, planning, and research. Prerequisite: professional program business student majoring. Accountancy Prerequisite with a grade of C or higher. ACC 430.

**ACC 467 Management Advisory Services.** 3 N

Concepts and methods of providing advisory services with respect to accounting information systems and financial analysis. Administration of consulting practices. Prerequisite: professional program business student majoring in Accountancy. Prerequisite with a grade of C or higher. ACC 330.

**ACC 475 Accounting in Public-Sector Organizations.** 3 N

Principles of accounting and reporting and budgeting and financial control systems applied to governmental units and other public organizations. Prerequisite: professional program business student majoring in Accountancy. Prerequisite with a grade of C or higher. ACC 316 or 350.

**ACC 483 Advanced Accounting.** 3 N

Accounting theory related to business combinations, consolidated financial statements, foreign operations, partnerships, and nonbusiness organizations. Prerequisite: professional program business student majoring in Accountancy. Prerequisite with a grade of C or higher. ACC 440.

**ACC 502 Financial Accounting.** 3 A

Financial accounting concepts and procedures for external reporting. Prerequisite: MBA degree program student.

**ACC 503 Managerial Accounting.** 3 A

Managerial accounting concepts and procedures for internal reporting. Prerequisite: MBA degree program student.

**ACC 511 Taxes and Business Strategy.** 3 A

Economic implications of selected management decisions involving application of federal income tax laws. Recognition of tax hazards and tax savings. Prerequisite: ACC 502. *Equivalent*.

**ACC 515 Professional Practice Seminar.** 3 A

History, structure, environment, regulation, and emerging issues of the accounting profession.

**ACC 521 Tax Research.** 3 A

Tax research source materials and techniques. Application to business and investment decisions. Prerequisite: ACC 430.

**ACC 533 EDP Auditing.** 3 N

Analysis of EDP audit techniques and evaluation methods. Emphasis on current topics such as distributed processing and microcomputers. Prerequisite: ACC 450.

**ACC 541 Strategic Cost Management and Uses of Information Technology.** 3 A

Strategic cost management emphasizing contemporary topics including activity-based costing and strategic uses of information technology systems. Cooperative learning. Lecture. Prerequisite: ACC 350 or 503.

**ACC 567 Financial Models in Accounting Systems.** 3 A

Development and application of financial models by accountants. Analysis of decisions on support systems as financial modeling environments. Prerequisite: ACC 330.

**ACC 571 Taxation of Corporations and Shareholders.** 3 A

Tax aspects of the formation, operation, reorganization, and liquidation of corporations and the impact on shareholders. Prerequisite: ACC 43.

**ACC 573 Taxation of Partners and Partnerships.** 3 A

Tax aspects of the definition, formation, operation, liquidation, and termination of a partnership. Tax planning is emphasized. Prerequisite: ACC 430.

**ACC 575 Estate and Gift Taxation.** 3 A

Tax treatment of wealth transfers at death and during lifetime with emphasis on tax planning. Prerequisite: ACC 430.

**ACC 577 Taxation of Real Estate Transactions.** 3 A

Income tax aspects of acquisition, operation, and disposition of real estate syndicates, installment sales, exchanges, dealer investor issues, alternative financing, and planning. Prerequisite: ACC 521 or instructor approval.

**ACC 582 Auditing Theory and Practice.** 3 N

Function and responsibility of the auditor in modern society. Advanced topics in auditing theory and methods. Contemporary issues in auditing. Prerequisite: ACC 450.

**ACC 586 Shareholder Value Creation and Financial Statement Analysis.** 3 N

Develop skills necessary to exploit financial reporting information in a business environment and appreciate and report on issues faced by management.

**ACC 587 Computerized Accounting Systems.** 3) A

Design and evaluation of computer-based accounting information systems. Development of computer-based financial models for planning and control. Prerequisite: ACC 330.

**ACC 591 Seminar on Selected ACC Topics.** 3 A

Topics such as the following are offered:

- Computer Security
- Data Warehouse and Data Mining
- Electronic Commerce
- Enterprise Modeling

**COMPUTER INFORMATION SYSTEMS (CIS)****CIS 200 Computer Applications and Information Technology.** (3) F S SS

Introduction to business information systems and the use of business applications software. Prerequisite: MAT 117 or higher. *General Studies N3*.

**CIS 220 Programming Concepts for Accountancy Majors.** (3) F S SS

Introduction to business computer programming. Program languages such as C and C++ are used to familiarize students with proper programming style and practice. Prerequisite: pre-business student.

**CIS 235 Business Information Systems Development.** 3) F, S, SS

Development of information systems and electronic commerce applications using object-oriented languages, e.g., JAVA. Introduction to business technology and systems analysis.

**CIS 300 Computers in Business.** 3 N

Introduction to information systems in business. Use of computers for business problem solving. Prerequisites: CIS 200 professional program business student.

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C, and H, see "General Studies" page 85. For graduation requirements, see University Graduation Requirement, page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see Classification of Courses, page 58.

**CIS 307 Systems Modeling.** 3 N

Procedures for investigating and analyzing decisions on systems. Use of special languages as tools of analysis and simulation. Prerequisites: CSE 100 MAT 119 or 210 or 270 professional program business student

**CIS 335 Visual Paradigms for Information Systems Development.** (3 F S SS)

Using visual programming languages such as Visual Basic to implement data structures, file structures, and interfaces in business information systems. Prerequisites: CSE 100 and professional program business student majoring in Computer Information Systems or CIS 220 and professional program business student majoring in Accountancy

**CIS 410 Object-Oriented Modeling and Programming.** 3 F, S

Object-oriented modeling of business information systems. Abstract data types and object-oriented programming using a language such as C++. Prerequisite: professional program business student majoring in Computer Information Systems. Prerequisite with a grade of "C" or higher: CIS 335

**CIS 420 Business Database Concepts.** (3) F S

Database theory design and application including the entity-relationship model, the relational hierarchy, and network database models, and query language. Prerequisite: professional program business student majoring in Computer Information Systems or Accountancy. Prerequisites with a grade of "C" or higher: ACC 330, C S 335

**CIS 430 Networks and Distributed Systems.** 3 F S

Advanced topics such as communication protocols, distributed systems, and client-server systems applications based on platforms such as networked UNIX. Prerequisite: professional program business student majoring in Computer Information Systems. Prerequisite with a grade of "C" or higher: C S 335

**CIS 440 Systems Design and Electronic Commerce.** (3 F S)

Systems design for organization and electronic commerce systems use of project management and systems analysis and design tools. Prerequisites: professional program business student majoring in Computer Information Systems. Prerequisites with a grade of "C" or higher: C S 410 420

**CIS 502 Management Information and Decision Support Systems.** 3 A

Fundamentals of computer based management information and decision support systems. Prerequisite: M B A degree program student

**CIS 505 Object-Oriented Modeling and Programming.** (3 A)

Object-oriented modeling of business information systems abstract data types and object-oriented programming using a visual language. Prerequisite: M S in Information Management or Master of Accountancy degree program student

**CIS 506 Business Database Systems.** 3 A

Hierarchical network, relational and other recent data models for database systems. Processing issues such as concurrency control query optimization and distributed processing. Prerequisite: M S in Information Management or Master of Accountancy degree program student

**CIS 510 Systems Models and Simulation.** 3 N

Design of computer based decisions systems. Simulation as a research and decision making tool. Prerequisite: M S in Information Management or Master of Accountancy degree program student

**CIS 512 Decision Support Systems.** 3 A

Definition description construction and evaluation of computer based decisions systems. Prerequisite: M S in Information Management or Master of Accountancy degree program student.

**CIS 515 Management Information Systems.** 3 N

Systems theory concepts applied to the collection retention and dissemination of information for management decisions making. Prerequisite: M S in Information Management or Master of Accountancy degree program student

**CIS 520 Systems Design and Evaluation.** (3 N)

Methodologies of systems analysis and design. Issues include project management, interface requirements, organizational requirements, constraints, documentation, implementation control and performance evaluation. Prerequisite: M S in Information Management or Master of Accountancy degree program student

**CIS 525 Artificial Intelligence in Business.** 3 N

Development and application of artificial intelligence approaches to business problems. Prerequisite: M S in Information Management or Master of Accountancy degree program student

**CIS 530 Information Systems Development.** 3 A

Object-oriented and interprocess communication and introduction concepts for information systems applications based on languages such as C++ and platforms such as networked UNIX. Prerequisite: M.S. in Information Management or Master of Accountancy degree program student

**CIS 535 Distributed Information Systems.** (3) A

Introduction to distributed systems and their impact on information systems in business. Prerequisite: M S in Information Management or Master of Accountancy degree program student

**CIS 591 Seminar on Selected CIS Topics.** 1 12 A

Topics such as the following are offered:

- Computer Security
- Computing Architectures
- Data Warehouse and Data Mining
- Electronic Commerce
- Enterprise Modeling

Prerequisite: M S in Information Management or Master of Accountancy degree program student

## Department of Economics

Arthur E. Blakemore

*Chair*

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[www.cob.asu.edu/ecn/index.html](http://www.cob.asu.edu/ecn/index.html)

### PROFESSORS

BLAKEMORE, BOYES, BRADA, BURDICK, BURGESS,  
DESERPA, FAITH, GOODING, HAPPEL, HOFFMAN,  
HOGAN, KINGSTON, LOW, MAYER, MCDOWELL,  
MCPHETERS, MELVIN, MENDEZ, ORMISTON, SCHLEE

### ASSOCIATE PROFESSORS

AHN, MANELLI, REFFETT, REISER,  
WILSON, WINKELMAN

### ASSISTANT PROFESSORS

CHADE, DATTA, HENDRICKS

### SENIOR LECTURER

ROBERTS

The study of economics affords an opportunity for the student to acquire a general knowledge of the methods by which goods and services are allocated and incomes are generated and why prices, employment, money, and financial markets behave as they do. Some knowledge of economics is crucial not only for those intending to participate in the business world, but for those intending to pursue graduate education in law or other business fields or to work in the world of journalism and communications.

Economists obtain positions at universities and in government, financial institutions, brokerage houses, private nonfinancial corporations, international organizations such as the International Monetary Fund and the World Bank, as financial journalists, and as marketing and management specialists in domestic and international firms.

Economics majors are required to earn a minimum grade of "C" in MAT 210 Brief Calculus before taking upper division courses in economics. While MAT 210 meets the minimum mathematics requirement to major in Economics, all Economics majors who anticipate going on to graduate school in economics or in business or to law school are

encouraged to take MAT 270 Calculus with Analytic Geometry I. Majors are encouraged to pursue further course work in mathematics. MAT 270 may be taken in lieu of MAT 210 in the science and mathematics area of the requirements described in the *Advising Handbook*.

The major in Economics consists of 18 semester hours of upper division courses in economics. The following six hours must be included:

- ECN 313 Intermediate Macroeconomic Theory SB . . . . . 3  
ECN 314 Intermediate Microeconomic Theory SB . . . . . 3

ECN 313 and 314 should be taken before other upper division courses in economics. Students must earn a minimum grade of "C" in ECN 313 and 314. Concurrent enrollment in ECN 313 and 314 is permitted. Concurrent enrollment in ECN 313 or 314 and other upper-division courses in economics is subject to the approval of the faculty advisor.

### MAJOR PROFICIENCY REQUIREMENTS

Students must receive grades of "C" or higher in upper division courses for the major. If a student receives a grade below "C" in any course in the major, this course must be repeated. If a second grade below "C" is received in either an upper division course in the major already taken or in a different upper division course in the major, the student is no longer eligible to take additional upper division courses in the major.

**Other Economics Programs.** For information on majoring in Economics in the College of Liberal Arts and Sciences, see "Economics," page 353.

For information on the minor in General Economics and on the minor in Economics for Students Planning a Career in Law, see "Economics," page 353.

### GRADUATION REQUIREMENTS

In addition to fulfilling major requirements, students seeking a degree must meet all university and college requirements. See "University Graduation Requirements," page 81 and "College Degree Requirements," page 152.

### ECONOMICS (ECN)

#### ECN 111 Macroeconomic Principles. (3) F S, SS

Basic macroeconomic analysis. Economic institutions and factors determining income levels and employment levels. *General Studies SB*

#### ECN 112 Microeconomic Principles. (3) F S

Basic microeconomic analysis. Theory of exchange and production, including the theory of the firm. *General Studies: SB*

#### ECN 304 Current Issues in Economics and Politics. (3) A

Application of basic economic principles to contemporary issues such as crime, the environment, discrimination, health care, and the national debt. Not for Economics majors. Lecture, student projects, discussion. Prerequisites: ECN 111 or 112. 2.00 ASU GPA, junior standing. *General Studies: L1 SB*

#### ECN 306 Survey of International Economics. (3) F S

Survey of international trade issues, commercial policy, trade theory, customs unions, and international monetary topics. Not for Economics majors. Lecture, discussion. Cross-listed as IBS 306. Credit is awarded only for ECN 306 or BS 306. Prerequisites: ECN 111 or 112. 2.00 ASU GPA, junior standing. *General Studies: SB G*

#### ECN 313 Intermediate Macroeconomic Theory. (3) F S

Determinants of aggregate levels of employment, output, and income of an economy. Prerequisites: ECN 111, 112. Prerequisite with a grade of "C" or higher: MAT 210. *General Studies SB*

#### ECN 314 Intermediate Microeconomic Theory. (3) F S

Role of the price system; organizing economic activity under varying degrees of competition. Prerequisites: ECN 111, 112. Prerequisite with a grade of "C" or higher: MAT 210. *General Studies SB*

#### ECN 315 Money and Banking. (3) SS

Functions of money; monetary systems; credit function; banking practices; and central banking policy. This course cannot be applied to the Economics major. Prerequisite: ECN 111

#### ECN 331 Comparative Economic Systems. (3) N

Alternative institutions; past and present; foreign; the social division of labor; property rights; information; and incentives in industrial societies. Prerequisite: ECN 111 or 112. *General Studies SB G*

#### ECN 360 Economic Development. (3) N

Theories of economic growth and development. Role of capital formation, technological innovation, population, and resource development in economic growth. Prerequisite: ECN 111 or 112. *General Studies SB G*

#### ECN 365 Economics of Russia and Eastern Europe. (3) A

Origins and analysis of contemporary institutions. Comparative development and differentiation in the 20th century. Prerequisite: ECN 111 or 112. *General Studies SB G*

#### ECN 394 ST: Special Topics. (3) N

Current topics of domestic or international interest. Analytical emphasis may be macro, micro, or both. See current *Schedule of Classes* for offerings. Not for Economics majors. Prerequisite: ECN 111 or 112.

#### ECN 404 History of Economic Thought. (3) N

Development of economic doctrines; theories of mercantilism, physiocracy, classicalism, neoclassicism, Marxism, and contemporary economics. Prerequisite: ECN 314 or instructor approval. *General Studies: SB*

#### ECN 421 Earnings and Employment. (3) A

Analysis of earnings, employment, unemployment, training, education, and related topics. Policy issues are emphasized. Prerequisite: ECN 314 or instructor approval. *General Studies L2/SB*

#### ECN 436 International Trade Theory. (3) A

The comparative-advantage doctrine, including practices under varying commercial policy approaches. The economic impact of international disequilibrium. Prerequisite: ECN 314 or instructor approval. *General Studies SB G*

#### ECN 438 International Monetary Economics. (3) A

History, theory, and policy of international monetary economics. Balance of payments and exchange rates; international financial markets; including Eurocurrency markets. Prerequisite: ECN 313 or instructor approval. *General Studies SB G*

#### ECN 441 Public Finance. (3) A

Public goods, externalities, voting, modes of public expenditures, taxation, and budget formation with emphasis on the federal government. Prerequisite: ECN 314 or instructor approval. *General Studies: L2/SB*

#### ECN 450 Law and Economics. (3) A

Economics of the legal system; including analysis of property, contracts, torts, commercial law, and other topics. Discussion, analysis. Prerequisite: ECN 314. *General Studies L2*

#### ECN 453 Government and Business. (3) A

Development of public policies toward business; antitrust activity; economic effects of government policies. Prerequisite: ECN 314 or instructor approval.

#### ECN 480 Introduction to Econometrics. (3) A

Elements of regression analysis; estimation; hypothesis tests; prediction. Emphasis on use of econometric results in assessment of economic theories. Prerequisite: instructor approval. *General Studies N2*

#### ECN 484 Economics Internship. (3) F S SS

Academic credit for professional work organized through the Internship Program. Prerequisites: ECN 313, 314, outstanding academic record.

**NOTE:** For the General Studies requirement courses, and codes (such as L1, N3, C and H) see *General Studies*, page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.



**ECN 485 Mathematical Economics.** 3 A

Integration of economic analysis and mathematical methods into a comprehensive body of knowledge with contemporary economic theory. Prerequisite: instructor approval.

**ECN 493 Honors Thesis.** 3 N**ECN 494 ST: Special Topics.** 3 N

Current economic topics of domestic or international interest. Analysis may be macro, micro, or both. See current *Schedule of Classes* for offerings.

- a Manufacturing Processes
- b Multinational Firm in the World Economy
- c Public Choice

Prerequisites: ECN 313 and 314 or instructor approval.

**ECN 498 PS: Pro-Seminar** (3 A)

Topic chosen from current area of interest. Prerequisites: ECN 313 and 314 or instructor approval.

**ECN 502 Managerial Economics.** 3 F S

Application of microeconomic analysis to managerial decisions making in areas of demand, production, cost, and pricing. Evaluation of competitive strategies. Prerequisite: MBA degree program student.

**ECN 503 Global Economics for Managers.** 3 F S

Macroeconomic analysis of issues related to economic growth, inflation, interest rates, behavior, unemployment, exchange rate determination, and global competitiveness.

**ECN 504 History of Economic Thought.** 3 S

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

**ECN 509 Macroeconomic Theory and Applications.** 3 F

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

**ECN 510 Microeconomic Theory and Applications.** (3 F S)

Application of economic theory to product, consumer demand, exchange, and pricing in a market economy. Prerequisites: ECN 112 and calculus or instructor approval.

**ECN 511 Macroeconomic Analysis I.** 3 F

Current theories of output, employment, inflation, and asset prices as well as macro aggregates. Introduction to dynamic optimization techniques. Prerequisites: ECN 313 and calculus or instructor approval.

**ECN 512 Microeconomic Analysis I.** 3 F

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

**ECN 513 Macroeconomic Analysis II.** 3 F

Focus on growth theory, dynamic general equilibrium models, monetary theory, open economy issues. Prerequisite: ECN 511 or instructor approval.

**ECN 514 Macroeconomic Analysis II.** 3 S

General equilibrium welfare economics, production, and capital theory. Prerequisite: ECN 512 or instructor approval.

**ECN 515 Advanced Macroeconomic Analysis.** 3 F

Focus on current research areas in macroeconomics and monetary theory with emphasis on methods in economic dynamics and numerical techniques. Prerequisite: ECN 511 or instructor approval.

**ECN 516 Economics of Uncertainty, Information, and Strategic Behavior.** 3 F

Economic behavior under uncertainty, markets and contracts under asymmetric information, the theory of games with incomplete information, and applications. Prerequisite: ECN 512 or instructor approval.

**ECN 517 Monetary Theory.** 3 F

Traditional and post-Keynesian monetary theory, interest rate determination, the demand and supply of money. Prerequisite: ECN 511 or instructor approval.

**ECN 521 Labor Economics I.** 3 F

Development of basic theoretical models for analyzing labor market issues. Prerequisite: ECN 510 or instructor approval.

**ECN 522 Labor Economics II.** N

Extensions or topics of labor market theories. Applications to a variety of policy issues. Prerequisite: ECN 521.

**ECN 525 Econometrics I.** 3 S

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

**ECN 526 Econometrics II.** 3 F

Estimation and inference for qualitative and limited dependent variables as well as general multiple equation models. Prerequisite: ECN 525 or instructor approval.

**ECN 527 Econometrics II.** 3 S

Generalized method of moments estimation, estimation with censored and truncated samples, nonlinear models, panel data models, econometrics forecasting. Prerequisite: ECN 526 or instructor approval.

**ECN 531 Comparative Economic Systems.** 3 F

Philosophical foundations of major economic systems and of properties of principal systems. Comparison of alternative institutions and system components of contemporary economies. Prerequisites: ECN 509 and 510 or instructor approval.

**ECN 536 International Trade Theory.** 3 S

Theories of comparative advantage and the empirical verification of theory and policy. Economic theory of international trade, resource transfers, and the role of multinational corporations. Prerequisites: ECN 594 and 510 or instructor approval.

**ECN 538 International Monetary Theory and Policy.** (3 F)

The foreign exchange market, balance of payments, and international financial institutions and arrangements. Theory and applications. Prerequisites: ECN 509 and 510 or instructor approval.

**ECN 541 Public Economics.** 3 S

Economics of collective action, public spending, taxation, and political impact of central government activity, resource allocation, and income distribution. Prerequisite: ECN 510 or instructor approval.

**ECN 553 Industrial Organization.** 3 S

Analysis of structure, conduct, and performance in industrial markets. The economics of organizations. Prerequisite: ECN 510 or instructor approval.

**ECN 560 Economics of Growth and Development.** 3 F

Economic problems, issues, and policy decisions facing the developing nations of the world. Prerequisites: ECN 509 and 510 or instructor approval.

**ECN 584 Economics Internship.** 1 3 SS

Academic credit for professional work organized through the internship program. Prerequisites: ECN 510 and 511 or instructor approval.

**ECN 585 Mathematics for Economists.** 3 F

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

**ECN 591 Economics Seminar.** 1 3 F S SS

Presentations by outside speaker, department faculty, and graduate students. Prerequisite: ECN 510 or instructor approval.

**ECN 593 Applied Projects.** 3 F

Preparation of a supervised applied project type, in conjunction with an internship. Prerequisites: ECN 510, 511.

**ECN 594 Conference and Workshop in Economics.** 1 12 F, S, SS

Topics chosen as follows are offered:

- a Economic Analysis Workshop  
Introduction to Economic Analysis. Prerequisite: Ph.D. degree program student.
- b Macroeconomic Topics Workshop.  
Issues in macroeconomic theory. Prerequisite: ECN 513 or instructor approval.
- c Microeconomic Topics Workshop.  
Issues in microeconomic theory. Prerequisite: ECN 514 or instructor approval.

**ECN 598 ST: Special Topics.** 3 N

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

**QUANTITATIVE BUSINESS ANALYSIS (QBA)**

For addition QBA courses, see Department of Management.

**QBA 221 Statistical Analysis.** 3 F S

Method of statistical data report. Application of probability theory and statistical inference. Prerequisite: MAT 119. *General Studies N2*.

**QBA 321 Applied Quality Analysis I.** 3 A

Applications of statistical tools employed in empirical studies related to quality analysis. Application focus: service processes. Prerequisite: QBA 221. *General Studies L2*.

- QBA 391 Management Science.** 3 N  
Study of mathematical models and solution techniques which can be used to aid decision makers. Prerequisites: MAT 119, 210 242 QBA 221 professional program business student *General Studies N2*
- QBA 410 Applied Business Forecasting.** 3 N  
Application of forecasting techniques in business and institutional environments. Prerequisite: QBA 321
- QBA 421 Applied Quality Analysis II.** 3 A  
Applications of statistical tools employed in manufacturing and experimental research. Applications focus on design and improvement of processes. Prerequisite: QBA 321.
- QBA 511 Sampling Techniques in Business.** (3) N  
Planning, execution and analysis of surveys in business research. Prerequisite: QBA 502
- QBA 525 Applied Regression Models.** (3) A  
Simple linear regression, multiple regression and categorical variables, and logistic regression. Emphasis on business and economic applications. Prerequisite: MAT 210.
- QBA 527 Categorical Data Analysis.** (3) A  
Discrete data analysis in business research. Multidimensional contingency tables and other discrete models. Prerequisite: QBA 525
- QBA 530 Experimental Design.** (3) A  
Experimental designs used in business research. Banded and unbanded factorial designs, repeated measures designs, and multivariate analysis of variance. Prerequisite: QBA 525 or equivalent
- QBA 535 Multivariate Methods.** 3 A  
Advanced statistical methods used in business research. Multivariate analysis of association and interdependence. Prerequisite: QBA 525.
- QBA 540 Forecasting.** (3) N  
Foundation of statistical forecasts and forecast intervals; application of classical and computer assisted forecasting methods to business forecasting problems. Prerequisites: MAT 210 QBA 502

ACC 315 Financial Accounting and Reporting	3
FIN 331 Financial Markets and Institutions	3
FIN 361 Managerial Finance	3
FIN 421 Security Analysis and Portfolio Management	3
Two additional 400 level FIN courses	6
Total	18

As part of the requirements, all Finance majors must complete ACC 250 Introductory Accounting Lab. Finance majors are strongly advised to take ACC 316 Management Uses of Accounting. FIN 484 Internship is available for nonmajor elective credit.

ACC 250 must be completed before taking ACC 315. FIN 331, 361, and ACC 315 must be completed before taking 400 level FIN courses.

### MAJOR PROFICIENCY REQUIREMENTS

Students must receive grades of "C" or higher in upper division courses for the major. If a student receives a grade below "C" in any course in the major, this course must be repeated before taking any further courses for which this course is a prerequisite. If a second grade below "C" is received in either an upper-division course in the major already taken or in a different upper division course in the major, the student is no longer eligible to take additional upper division courses in that major.

### GRADUATION REQUIREMENTS

In addition to fulfilling major requirements, students seeking a degree must meet all university and college requirements. See "University Graduation Requirements," page 81 and "College Degree Requirements," page 152.

## Department of Finance

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### PROFESSORS

BESSEMBINDER, BOOTH COLES JOEHNK, KAUFMAN,  
POE, SUSHKA

### ASSOCIATE PROFESSORS

CESTA GALLNGER, HERTZEL, HOFFMEISTER,  
MARTIN, WLT

### ASSISTANT PROFESSORS

GRFFIN LEMMON, PERRY

### LECTURER

OAKES

The study of finance prepares students to understand the financial implications inherent in virtually all business decisions. Students majoring in Finance are prepared for entry level careers in corporate management, depository institutions, investment management, and financial services. The finance curriculum emphasizes financial markets, evaluation of investments, and efficient allocation of resources.

The major in Finance consists of the following courses:

### FINANCE (FIN)

- FIN 300 Fundamentals of Finance.** (3) F S SS  
Theory and problems in financial management of business enterprises. Prerequisites: ACC 240 ECN 112 QBA 221
- FIN 331 Financial Markets and Institutions.** 3 F, S  
Analysis of financial markets and interrelated issues. Theory of financial markets: interest rate theory, money and capital market instruments and government regulation. Prerequisite: with a grade of "C" or higher FIN 300
- FIN 361 Managerial Finance.** 3 F S  
Theories and problems in resource allocation: cost of capital, CAPM and capital budgeting, asset valuation, capital structure, and financial policy. Prerequisite: with a grade of "C" or higher FIN 300
- FIN 380 Personal Financial Management.** 3 F S  
Dynamic analysis of personal financial planning: income tax, use of money, stock and bond investment and retirement and estate planning. Prerequisites: minimum cumulative GPA of 2.00 junior or standing non-Finance major
- FIN 421 Security Analysis and Portfolio Management.** (3) F S  
Security analysis theory and practice. Selection and management of financial assets: portfolios. Securities markets and portfolio risk return analysis. Lecture/discussion. Prerequisite: professional program business student. Prerequisites: with a grade of "C" or higher ACC 315 FIN 331 361
- FIN 427 Derivative Financial Securities.** (3) A  
Study of stock options, index options, convertible securities, financial futures, warrants, subscription rights and arbitrage pricing theory. Lecture/discussion. Prerequisites: FIN 421 professional program business student
- FIN 431 Management of Financial Institutions.** 3 A  
Asset liability and capital management in financial institutions: influence of market factors and regulatory agencies. Emphasis on commercial banks. Lecture/discussion. Prerequisite: professional program business student. Prerequisites: with a grade of "C" or higher ACC 315 FIN 331 361

**FIN 451 Working Capital Management.** 3 N  
 Analysis of short term profitability and liquidity. Emphasis on managing cash, accounts receivable inventory and current liabilities. Lecture, discussion. Prerequisite: professional program business student. Prerequisites with a grade of 'C' or higher: ACC 315, FN 331 361

**FIN 456 International Financial Management.** 3 A  
 Exchange rate determination in financial markets managing multinational corporations capital budgeting and hedging currency risk exposure from an international perspective. Prerequisite: professional program business student. Prerequisites with a grade of 'C' or higher: ACC 315 FN 331 361 *General Studies G*

**FIN 461 Financial Cases and Modeling.** 3 A  
 Case-oriented capstone course in managerial finance. Contemporary issues of liquidity management, capital budgeting capital structure and financial strategy. Lecture discussion group work. Prerequisite: professional program business student. Prerequisites with a grade of 'C' or higher: ACC 315 FN 331 361 *General Studies L2*

**FIN 481 Honors Seminar in Finance.** 3 A  
 Honors course covering topics that include theory and applications concerning managerial finance investments and financial institutions. Lecture, discussion. Prerequisites: professional program business student; honors student. Prerequisite: Finance major with minimum 3.40 GPA. Prerequisites with a grade of 'C' or higher: ACC 315; FN 331 361

**FIN 484 Finance Internship.** 3 F S SS  
 Academic credit for fieldwork in finance organized through the Internship Program. Prerequisites: FN 331 361. Student organization record instructor approval.

**FIN 502 Managerial Finance.** 3 A  
 Theory and practice of financial decision making including risk analysis valuation capital budgeting, cost of capital and working capital management. Prerequisites: ACC 502 ECN 502 QBA 502

**FIN 521 Investment Management.** 3 A  
 Valuation of equities fixed incomes and options financial futures and individual security and portfolio context. Mathematics as an application. Approaches: Lecture, discussion. Prerequisite: FIN 502

**FIN 527 Derivative Financial Securities.** 3 A  
 Analysis of forwards futures and options contracts in bonds, commodities, equities, and foreign exchange. Design of speculative and hedging strategies. Lecture, discussion. Prerequisites: FN 502, 521.

**FIN 531 Capital Markets and Institutions.** 3 A  
 Recent theoretical and operational developments in economic sectors affecting capital markets and institutions. Lecture discussion. Prerequisite: FN 502

**FIN 551 Financial Statement Analysis.** 3 A  
 Analysis of corporations' financial statements to ascertain their financial strength and default risk. Emphasis on studying cash flows. Lecture cases. Prerequisites: ACC 502 FN 502

**FIN 556 International Financial Management.** 3 A  
 Behavior of real and nominal currency exchange rates management of international investment portfolios cross rate exchange exposure and hedging exchange risk. Lecture discussion. Prerequisite: FN 502

**FIN 561 Financial Management Cases.** 3 A  
 Case-oriented course in applications of finance theory to management issues. Acquisition of analytical and management of funds within the business enterprise. Working capital management capital budgeting capital structure and financial strategy. Lecture discussion presentation. Prerequisite: FN 502

**FIN 581 Applied Corporate Finance.** 3 A  
 Application of theory in corporate finance. Market efficiency capital structure principal-agent theory corporate control dividend policy and capital budgeting. Prerequisite: FN 502

**FIN 781 Theory of Finance.** 3 A  
 Fundamental tools of financial economics: asset pricing, arbitrage, option pricing capital structure dividend policy asymmetric information, and transaction cost economics. Prerequisites: FN 502 521 531

**FIN 791 Doctoral Seminar in Finance.** 3 A  
 a. Financial Institutions and Markets.  
 Economic and monetary theory applied to financial markets and institutions. Implications of financial structure for market performance and efficiency. Prerequisite: FN 781  
 b. Financial Management  
 Financial theory pertaining to capital structure dividend policy valuation, cost of capital and capital budgeting. Prerequisite: FN 781  
 c. Investments  
 Investments and market theory efficient markets hypothesis option and commodity markets. Prerequisite: FN 781.

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## School of Health Administration and Policy

**Eugene S. Schneller**  
*Director*  
 (BAC 554) 480/965-7778  
 Fax 480/965-6654  
 www.cob.asu.edu/hap

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### PROFESSORS

FORSYTH, JOHNSON, KRKMAN LIFF, KRONENFELD, SCHNELLER, WESBURY WILLIAMS

**ASSISTANT PROFESSOR**  
 RIVERS

### GRADUATE PROGRAMS

The faculty in the School of Health Administration and Policy offer the Master of Health Services Administration (M.H.S.A.) degree. The M.H.S.A. program is accredited by the Accrediting Commission on Education for Health Services Administration. Students enrolled in the school may earn concurrent M.H.S.A./M.B.A. degrees. The school also collaborates with the College of Law to allow students to earn concurrently the M.H.S.A. J.D. degrees, and the College of Nursing to allow students to earn concurrently the M.H.S.A. degree and the M.S. degree in Nursing with a concentration in nursing administration.

Through the Arizona Graduate Program in Public Health, the school faculty administer a health administration and policy concentration that leads to a Master of Public Health (M.P.H.) degree granted by the University of Arizona. The M.P.H. is accredited by the Council on Education for Public Health. Courses pertaining to the M.P.H. program include:

HSA 560	Health Services Administration and Policy	3
HSA 561	Biostatistics	3
HSA 562	Health Care Organization and Systems	3
HSA 563	Health Care Economics	3
HSA 564	Health Care Finance	3
HSA 565	Policy Issues in Healthcare	3
HSA 598	ST Epidemiology	3

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**NOTE:** For the General Studies requirement courses, and codes such as L1 N3, C and H see 'General Studies, page 85. For graduation requirements see 'University Graduation Requirements' page 81. For an explanation of additional non-business courses offered but not listed in this catalog see 'Classification of Courses' page 58.

Undergraduates may register in the above courses with permission of the instructor using the HSA 498 designation.

For more information on programs, see the *Graduate Catalog*.

### HEALTH SERVICES ADMINISTRATION (HSA)

#### HSA 220 Health Care Organizations. 3 F, S

Overview of United States health care delivery systems, financial health policy, basic principles of budgeting, cost benefit analysis, and resource management. Cross-listed as HCR 220. Credit is allowed only for HCR 220 or HSA 220. Prerequisites: ENG 101, 102.

#### HSA 473 Comparative Health Systems. 3 N

Comparison of health care financing and delivery in industrialized countries, covers insurance, hospital management and physician payment. Lecture/discussion.

#### HSA 494 ST: Special Topics in Health Administration. 3 N

Seminar topics including comparative health care systems, ambulatory care administration, behavioral health, long term care, and health economics. Prerequisite: instructor approval.

#### HSA 498 PS: Biostatistics. 3 N

Aspects of descriptive statistics and statistical inference most relevant to health issues including data rates and confidence intervals.

#### HSA 498 PS: Health Care Finance. 3 N

Overview of the acquisition and management of financial resources by health care providers. Focuses on economic, financial, and accounting principles.

#### HSA 498 PS: Health Care Economics. 3 N

Introduction to concepts and methods used to direct and understand production and distribution of health care services.

#### HSA 498 PS: Health Services Administration and Policy. 3 N

Introduction to organizational theory and management of complex organization within the historical and contemporary contexts of the US public health.

#### HSA 498 PS: Policy Issues in Health Care. 3 N

Current policy issues in health through concepts of access, cost, and quality issues relating to disease trends and policy formulation.

#### HSA 502 Health Care Organization. 3 A

Concepts, structures, function, and values which characterize contemporary health care systems in the United States.

#### HSA 505 Community Health Care Perspectives. 3 A

Epidemiology, sociology, and political perspectives and techniques for analyzing health problems and responding to health care needs in communities. Prerequisite: HSA 502.

#### HSA 512 Health Care Economics. 3 A

Economics of production and distribution of health care services with special emphasis on the impact of regulation, competition, and economic incentives. Prerequisite: HSA 502.

#### HSA 520 Health Care Organizational Structure and Policy. 3 A

Functional relationships among managerial elements of health care institutions with major focus on hospital governance and policy dynamics. Prerequisite: HSA 502.

#### HSA 522 Health Care Management Systems. 3 A

Systems concepts, quantitative methods, and information systems applied to management problems in health institutions and community health planning. Prerequisites: HSA 505, QBA 502.

#### HSA 532 Financial Management of Health Services. 3 A

Acquisition and management of financial resources within the health care enterprise. Budgeting, cost analysis, financial planning, and international issues. Prerequisites: ACC 503; F N 502; HSA 502.

#### HSA 542 Health Care Jurisprudence. 3 A

Legal aspects of health care delivery for hospital and health services administration. Legal responsibilities of the hospital administrator and staff. Prerequisites: HSA 505, 520.

#### HSA 560 Health Services Administration and Policy. 3 F

Introduction to organizational theory and management of complex organization within the historical and contemporary contexts of the US public health.

#### HSA 561 Biostatistics. 3 F

Aspects of descriptive statistics and statistical inference most relevant to health issues including data rates, and confidence intervals.

#### HSA 562 Health Care Organization and Systems. 3 F

Functional relationships among managerial elements of health care institutions with major focus on hospital governance and policy dynamics.

#### HSA 563 Health Care Economics. 3 S

Introduction to concepts and methods used to direct and understand production and distribution of health care services.

#### HSA 564 Health Care Finance. 3 S

Overview of the acquisition and management of financial resources by health care providers. Focuses on economic, financial, and accounting principles.

#### HSA 565 Policy Issues in Health Care. 3 F

Current policy issues in health through concepts of access, cost, and quality issues relating to disease trends and policy formulation.

#### HSA 571 Managed Care. 3 N

Trends in managed care, integrated systems, complexities of bargaining objectives (e.g., financial and quality). A two-semester-long marketing assessment. Prerequisite: HSA 502.

#### HSA 573 Comparative Health Systems. 3 A

Comparison of health care financing and delivery in industrialized countries, covers insurance, hospital management and physician payment. Lecture/discussion.

#### HSA 575 Chronic Care Administration. 3 A

Management of long term care services and facilities, including behavioral health and rehabilitation programs.

#### HSA 589 Integrative Seminar. 3 A

Capstone assessment of current policies, problems, and controversies across the broad spectrum of health services administration. Prerequisites: HSA 505, 520, 522, 532.

#### HSA 591 Seminar. 3 A

Seminar topics such as the following may be offered:

- Behavioral Health
- Cost Containment and Quality Assurance
- Health Care Economic Outcomes
- Health Care Policy
- Managing Physicians
- Topics in Health Services Research

#### HSA 593 Applied Project. 3 F, S, SS

Optional on-site experience in advanced development of managerial skills in health services administration and policy. Minimum of 10 weeks. Prerequisites: 18 hours of credit toward program of study; director approval.

#### HSA 598 ST: Special Topics. 3 A

Special topics such as the following may be offered:

- Epidemiology

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## International Business Studies

Josef C. Brada

Director

(BAC 689) 480/965-6524

[www.cob.asu.edu/up/ipo.html](http://www.cob.asu.edu/up/ipo.html)

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### Certificate in International Business Studies

The program of study leading to the Certificate in International Business Studies is designed to prepare students for positions with multinational firms, banks, government agencies, and international organizations. This program is not a substitute for the listed areas of business specialization; rather, the courses required for the certificate add an international dimension to the student's chosen major.

Requirements for the certificate are designed to provide an understanding of international business environments, principles and operations, to provide an awareness of global social processes and a sensitivity to foreign cultures, and to develop competence in a foreign language. These objectives are met in the following ways: international business princi

ples and operations, global and area studies, foreign language, and GPA proficiency

**International Business Principles and Operations.** At least 15 semester hours of approved courses in international business are required. Students must take either IBS 300 Principles of International Business or ECN/IBS 306 Survey of International Economics and the international course in their major. Other international business courses from which the remaining hours are selected include:

- ECN 306 Survey of International Economics *SB G* ..... 3  
or IBS 306 Survey of International Economics *SB G* 3
- ECN 331 Comparative Economic Systems *SB G* ..... 3
- ECN 360 Economic Development *SB G* ..... 3
- ECN 365 Economics of Russia and Eastern Europe *SB G* ..... 3
- ECN 436 International Trade Theory *SB G* ..... 3
- ECN 438 International Monetary Exchanges *SB, G* ..... 3
- ECN 494 ST Multinational Firm in the World Economy ..... 3  
or IBS 494 ST Multinational Firm in the World Economy 3
- FIN 456 International Financial Management *G* ..... 3
- IBS 300 Principles of International Business *C G* ..... 3
- IBS 394 ST Regional Business Environment of Southeast Asia ..... 3  
or IBS 494 ST Regional Business Environment of Southeast Asia 3
- IBS 400 Cultural Factors in International Business *G* ..... 3
- IBS 493 International Honors Thesis ..... 3
- IBS 499 Individualized Instruction of International Business ..... 3
- MGT 459 International Management ..... 3
- MGT 494 ST International Management ..... 3
- MKT 394 ST Global Markets ..... 3
- MKT 435 International Marketing ..... 3
- MKT 494 ST International Marketing ..... 1-4
- SCM 463 International Transportation and Logistics ..... 3

College of Business students may not use this course to fulfill General Studies SB requirements

Honors students who select an international topic for their thesis may use that as part of the 15 hours of international course work for the certificate

**Global and Area Studies.** This requirement can be satisfied either by means of course work or through participation in approved College of Business exchange programs with foreign schools of business, or by some combination of the two. The course work option requires at least 12 semester hours of approved electives in international and area studies. A minimum of six semester hours must be in courses that provide a cross-cultural perspective from the global point of view of one or more disciplines. A minimum of six semester hours must be in courses that provide an understanding of one region of the world

Students who participate in an approved College of Business exchange program with a foreign business school for two semesters are deemed to have fulfilled the global and area studies requirements of the Certificate in International Business upon the successful completion of this exchange program. Students who participate in such an exchange program for one semester are deemed to have satisfied the required six hours of area studies courses. Students who participate in a business seminar need only complete three hours of area studies courses to meet the requirements of the certificate.

**Foreign Language.** Evidence of competence in a foreign language equivalent to one year of college study is required.

**GPA Proficiency.** Applicants for the Certificate in International Business must earn a "C" or higher in each of the courses selected for the certificate, have at least a 2.5 GPA for all course work applied to the certificate, and complete at least 50 percent of the course work at ASU Main

**Advising.** When planning and selecting courses to meet the requirements for the certificate and to take advantage of opportunities for participation in exchanges with foreign schools of business, students should consult with an international business faculty advisor. Adele Gasca, Coordinator of International Programs, BA 122, 452-2674/661, visit the Web site.

**INTERNATIONAL BUSINESS STUDIES (IBS)**

**IBS 300 Principles of International Business.** 3 F S  
Multidisciplinary analysis of international economic and financial environment. Operations of multinational firms and their interaction with home and host societies. Prerequisite: ECN 12 *General Studies G*

**IBS 306 Survey of International Economics.** 3 F S  
Survey of international trade issues, commercial policy, trade theory, customs unions and international monetary topics. Not for Economics majors. Lecture/discussion classes listed as ECN 306. Credits awarded only for ECN 306 or IBS 306. Prerequisites: ECN 111 or 112, 2.00 ASU GPA, junior or standing. *General Studies SB G*

**IBS 394 ST: Special Topics.** 3 F S  
a. Regional Business Environment of Southeast Asia

**IBS 400 Cultural Factors in International Business.** 3 F S S  
Cultural role in international business relations, applied principles of cross-cultural communications, negotiations and management regional approaches to business relations. Prerequisite: IBS 300, 306 or ECN 306. *General Studies C G*

**IBS 493 International Honors Thesis.** 3 F S

**IBS 494 ST: Special Topics.** 3 F S  
a. Multinational Firm in the World Economy  
b. Regional Business Environment of Southeast Asia

**IBS 499 Individualized Instruction of International Business.** 3 F S

**NOTE.** For the General Studies requirement courses and codes such as L1, N3, C and H, see General Studies page 85. For graduation requirements, see University Graduation Requirement page 81. For a explanation of additional common business courses offered but not listed in this catalog, see Classification of Courses page 58.

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## Department of Management

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*Chair*  
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 www.cob.asu.edu/mgt

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### PROFESSORS

ASHFORTH BOHLANDER, CARDY, DOOLEY, GLICK,  
 GOMEZ MEJIA, HERSHAUER HOM, K NICKI, K RKWOOD,  
 KULIK, PENLEY, REIF RUCH

### ASSOCIATE PROFESSORS

BOYD BRENNSTUHL BROOKS, CALLARMAN, CHOI,  
 COOK, KEATS, KEEFER KELLER, MOORHEAD, OLIVAS,  
 OSTROFF, ROBERSON  
 D. SMITH-DANIELS, V. SMITH-DANIELS,  
 VAN HOOK, VERD NI

### ASSISTANT PROFESSORS

BLANCERO LANE, RUNGTUSANATHAM

### SENIOR LECTURERS

DORAN, KRE TNER, LEA

### LECTURERS

DAV LA, SACK

Widely recognized for their work in the areas of strategic management, organizational behavior, human resource management, operations management, and management science, the faculty in ASU's Department of Management emphasize high tech management, quality, process and project management, decision and risk analysis, globalization, diversity, small business and entrepreneurship, change management, systems dynamics, organizational identity, corporate governance, and human resource management practices in their research, consulting, and teaching.

Department of Management faculty take great pride in their teaching excellence and have been very active in continuous improvement of collaborative teaching techniques. Eight management faculty and teaching assistants have won recent college or university level awards for their excellence in teaching effectiveness.

### MAJOR IN MANAGEMENT: A SKILLS EMPHASIS

Understanding of theory and concepts of management are enhanced by experiencing and testing these concepts in skill based exercises and cases throughout the curriculum. After analyzing surveys of graduates, their employers, and members of the Dean's Council of 100, the department concluded that the major should have a strong emphasis on measurable, competency based skills. Based on the survey data, we identified major skill areas that encompass the most important competencies, including

- Administrative
- conflict management
- diversity awareness management
- project management

- Analytical
  - creativity innovation
  - critical analysis skills
  - planning decision making skills
- Coaching/Facilitating
  - employee motivation
  - employee training development
  - mentoring
- Communication
  - persuasion and negotiation
  - verbal
  - written
- Team Orientation
  - delegation and empowerment
  - develop and maintain teamwork
  - relationship building

The faculty focus on both understanding theory and developing competency in these specific skills in all management courses, particularly the three courses taken by all management majors, MGT 311 Human Resource Management, MGT 352 Human Behavior in Organizations, and MGT 463 Strategic Management. The emphasis is on special participative exercises and assignments to practice the skills. Some of these skills, such as communicating, team building, and critical analysis are also emphasized in college core classes (MGT 30 Management and Organization Behavior and OPM 301 Operations and Logistics Management). Further, all undergraduate management classes emphasize skill development exercises for appropriate course topics. Management majors can choose their electives in one of four tracks: general management, managing human resources, small business and entrepreneurship, or managing business processes.

### GENERAL MANAGEMENT

The central purpose of the Management major is to prepare men and women for managerial leadership in a world characterized by demands for continuous improvements in quality; growing technological sophistication, racial, cultural, and gender diversity in the work force; and expanding globalized markets. This emphasis is on accomplishing the organization's goals in a changing environment by successfully coordinating all available resources. As technological change and global markets create new opportunities for modern organizations, there are increasingly complex challenges to be met by the contemporary manager.

To prepare students to meet these challenges, the general management track curriculum is designed to provide exercises and cases that focus on developing competency based skills. Applications orientations in classroom settings will promote the development of administrative, analytic, and communicating skills, coaching and facilitating skills; and a team orientation. This pragmatic focus is developed in both internal and external contexts:

1. legal environment of management activity,
2. the range of human behavior encountered in organizational settings,
3. the interrelation of the component functions of a business:

4. the responsibilities of a firm in contemporary society,
5. the challenges to an organization active in an international arena, and
6. the role of the entrepreneur in the growth of businesses

The following courses must be taken to complete this track

MGT 311 Human Resource Management . . . . .	3
MGT 352 Human Behavior in Organizations . . . . .	3
MGT 434 Social Responsibility of Management . . . . .	3
MGT 459 International Management . . . . .	3
MGT 463 Strategic Management L2 . . . . .	3
MGT elective . . . . .	3
Total . . . . .	18

This generalist perspective addresses such current issues as diversity in the workplace, global involvement, total quality management, ethics, and other managerial emphases that promote success. An interactive, cooperative learning environment is stressed.

As the preferred track for the individual wanting a general grounding in the management discipline, students find a broad range of opportunities available upon graduation. Service and manufacturing firms, for profit and not for profit organizations, and large and small organizations will immediately benefit from the preparation of these graduates and recruit them for challenging trainee positions or entry level management positions.

**MANAGING HUMAN RESOURCES**

People are the common denominator in all organizations. The efficient and effective management of people is central to the success of the organization. Management has been defined as "the process of getting things done through people." The human resource management track in the Management major introduces students to the spectrum of knowledge necessary to the effective management of people.

This track is designed to train and familiarize future employees, general managers, and human resource specialists with the human resource functional areas, such as performance appraisal, dismissal, and the legal environment surrounding the employment relationship.

Students in this track develop key skills in managing work force diversity, team building, and negotiation. Focus in this track is on developing skills in managing people. Students are involved in class activities such as cases and experiential exercises which develop skills in preventing and solving human resource problems.

The following courses must be taken to complete this track:

MGT 311 Human Resource Management . . . . .	3
MGT 352 Human Behavior in Organizations . . . . .	3
MGT 413 Compensation Management . . . . .	3
MGT 423 Employee Management Relations . . . . .	3
MGT 463 Strategic Management L2 . . . . .	3
MGT elective . . . . .	3
Total . . . . .	18

Large corporations in manufacturing and services, as well as small businesses and consulting firms, hire students in this track.

**SMALL BUSINESS AND ENTREPRENEURSHIP**

Managing, growing, developing, and starting small businesses is one of the most vital and challenging segments of the economy. Most new innovations spring from small to midsize firms. New venture opportunities emerge each day. Smaller firms constitute the job creation engine of the nation. The potential for individual wealth creation largely resides among entrepreneurial firms, and in an era of downsizing, many current and former corporate employees are looking toward self employment as a long term career option. The sequence of courses in the small business and entrepreneurship track does not limit student ability to seek employment in the corporate environment. Rather, it provides an enhanced skill set many firms will value, and it offers alternative career options.

The small business and entrepreneurship course sequence provides a broad based understanding of the entrepreneurial process and the unique problems and challenges faced by smaller firms. In addition, students gain an opportunity to develop their own potential venture concepts.

The following courses must be taken to complete this track:

MGT 311 Human Resource Management . . . . .	3
MGT 352 Human Behavior in Organizations . . . . .	3
MGT 440 Entrepreneurship . . . . .	3
MGT 445 Business Plan Development . . . . .	3
or MGT 494 ST Small Business Planning . . . . .	3
MGT 463 Strategic Management L2 . . . . .	3
MGT elective . . . . .	3
Total . . . . .	18

Note that MGT 445 Business Plan Development (BPD) and MGT 494 ST Small Business Planning (SBP) will have some overlapping sessions. All students will learn about developing business plans and working in small business. Students in the BPD course will prepare a full scale business plan. Students in the SBP class will complete a "small business experience." Students may not get credit for both classes.

Students completing the small business and entrepreneurship track are most likely to work in small businesses or new ventures within larger corporations. Students in this track (or other business majors) may also be interested in the Certificate in Small Business and Entrepreneurship. See "Certificate in Small Business and Entrepreneurship," page 173.

**MANAGING BUSINESS PROCESSES**

Processes are central to all organizations. Designing and manufacturing a product involves a series of steps in a transformation process starting with raw materials acquisition and continuing through product production, delivery, and use. Determining and delivering a service involves a series

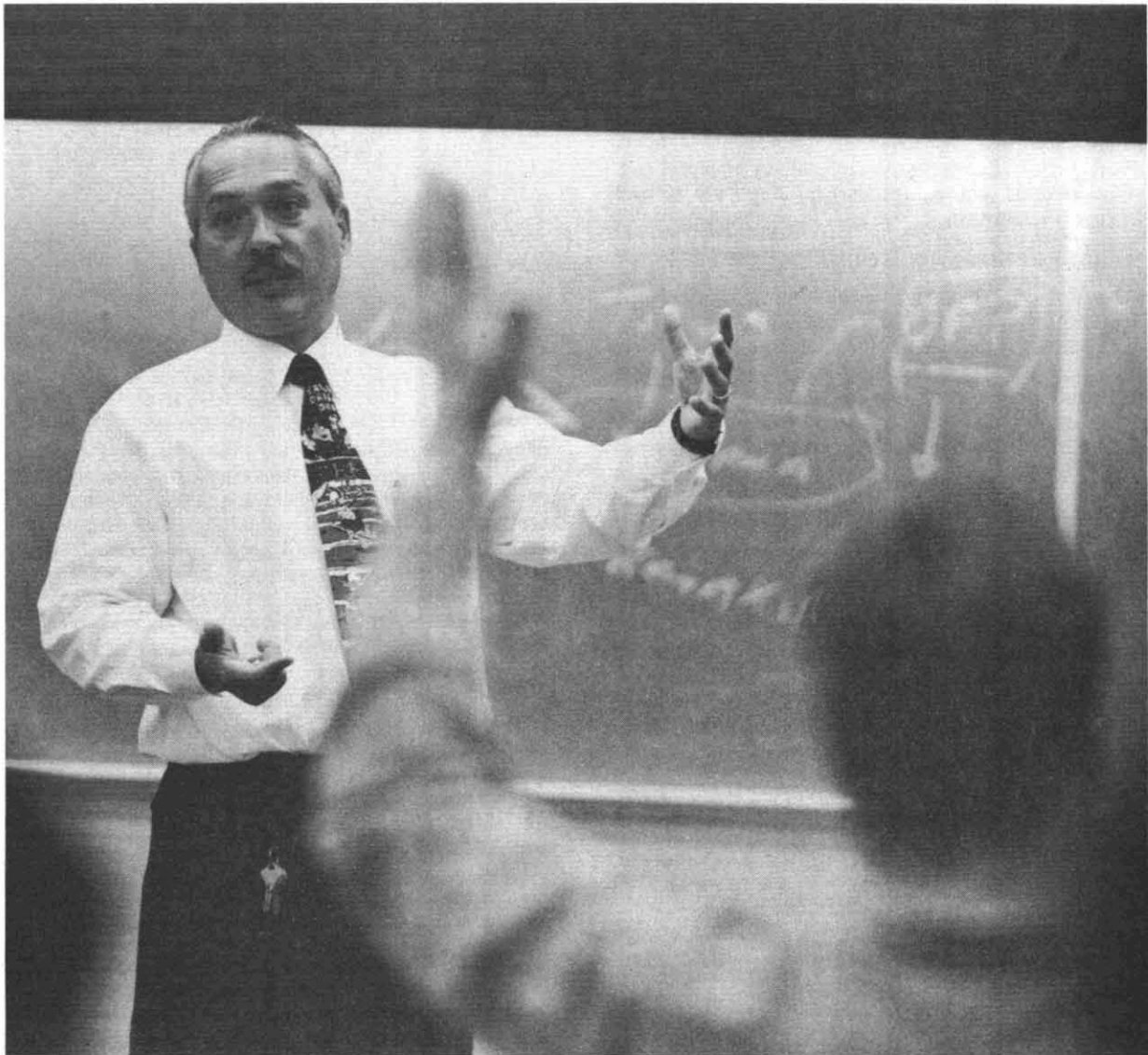
**NOTE.** For the General Studies requirement, courses and codes such as L1, N3, C and H see "General Studies, page 85. For graduation requirements see "University Graduation Requirements" page 81. For an explanation of additional non-business courses offered but not listed in this catalog see "Classification of Courses" page 58.

of steps in setting service characteristics and providing the service. Specific theories and tools for managing, changing, and continuously improving business processes have been developed and are key ingredients to successfully managing businesses in our global economy.

Students in this track develop key skills in communicating and working with people, particularly in planning and managing process changes. The focus in this track is on understanding key aspects of process design and analysis. Students are involved in case studies and industry projects dealing with actual process issues. Students in this track focus on developing knowledge and skills in product/service design and management, process improvement and problem solving, analysis of process costs, change management, team approaches to solving process problems, and project management skills.

The following courses must be taken to complete this track:

MGT 311	Human Resource Management.....	3
MGT 352	Human Behavior in Organizations.....	3
MGT 433	Management Decision Analysis.....	3
	or MGT 468 Management Systems (3)	
	or MGT 480 Team Management Skills (3)	
	or MGT 494 ST: Total Quality Management and Human Resource Management (3)	
MGT 463	Strategic Management L2.....	3
QBA 321	Applied Quality Analysis I L2.....	3
	or ECE 394 ST: Introduction to Manufacturing Engineering (3)	
	or QBA 391 Management Science N2 (3)	
	or SCM 432 Materials Management (3)	
QBA 450	Operations and Process Analysis L2.....	3
Total	.....	18



National Association of Purchasing Management Professor Joseph R. Carter draws animated response from students in his graduate and undergraduate classes.

Jeff Havir photo



Because managing and controlling the quality of processes is a key issue in process management, students electing this track are strongly urged to also complete the Certificate in Quality Analysis. See "Certificate in Quality Analysis," page 154.

Although large corporate manufacturing and service firms will hire students in this new track, there will also be special opportunities for these students to have a strong positive impact in the many start up and medium sized businesses in Arizona. Many management consulting firms that recruit college graduates are very interested in students from this track.

**Approved Electives for Management.** The following electives have been approved for the management tracks.

ACC 316 Management Uses of Accounting . . . . .	3
MGT 413 Compensation Management . . . . .	3
MGT 422 Training and Development . . . . .	3
MGT 423 Employee Management Relations . . . . .	3
MGT 424 Employee Selection and Appraisal . . . . .	3
MGT 433 Management Decision Analysis . . . . .	3
MGT 434 Social Responsibility of Management . . . . .	3
MGT 440 Entrepreneurship . . . . .	3
MGT 441 Venture Design and Development . . . . .	3
MGT 442 Small Business Management . . . . .	3
MGT 445 Business Plan Development . . . . .	3
MGT 459 International Management . . . . .	3
MGT 468 Management Systems . . . . .	3
MGT 480 Team Management Skills . . . . .	3
MGT 494 ST: Special topics . . . . .	3
MKT 302 Fundamentals of Marketing Management . . . . .	3
QBA 450 Operations and Process Analysis I, II . . . . .	3

**Hot Links to Major in Management.** Further information, hot links to courses and current faculty, and any updates on the undergraduate major in Management can be found at [www.cob.asu.edu/mgt](http://www.cob.asu.edu/mgt)

**MAJOR PROFICIENCY REQUIREMENTS**

Students must receive grades of "C" or higher in upper division courses for the major. If a student receives a grade below "C" in any course in the major, this course must be repeated. If a second grade below "C" is received in either an upper division course in the major already taken or in a different upper division course in the major, the student is no longer eligible to take additional upper division courses in that major.

**GRADUATION REQUIREMENTS**

In addition to fulfilling major requirements, students seeking a degree must meet all university and college requirements. See "University Graduation Requirements," page 81 and "College Degree Requirements," page 152.

**GRADUATE PROGRAMS**

The Department of Management participates actively in several masters and Ph.D. programs, particularly the technology M.B.A., executive M.B.A., evening M.B.A., and day M.B.A. programs. These programs are described more fully in the *Graduate Catalog*. Areas of concentration offered by the Department of Management for technology, evening, and executive M.B.A. students include: process manage-

ment in high technology organizations; globalization and diversity management, entrepreneurship and small business development; and management consulting.

The Department of Management has adopted a modular approach to Ph.D. education to improve our ability to deliver focused, high quality seminars, give students more flexibility in defining their areas of expertise, increase their rate of quality publications, and enhance the quality of Ph.D. placements.

**Hot Links to Graduate Programs.** Further information, hot links to courses and current faculty, and any updates on the Department of Management areas of concentration for the M.B.A. programs can be found at [www.cob.asu.edu/mgt](http://www.cob.asu.edu/mgt)

General information on the M.B.A. programs can be found at [www.cob.asu.edu/mba](http://www.cob.asu.edu/mba)

Further information, application procedures, hot links to current faculty, and any updates on the Ph.D. program in Management can be found at [www.cob.asu.edu/mgt/degree/phdmainpg.htm](http://www.cob.asu.edu/mgt/degree/phdmainpg.htm).

**MANAGEMENT (MGT)**

**MGT 301 Management and Organization Behavior.** 3 F, S SS  
Administrative organization and behavior theories and functions of management contributing to the effective and efficient accomplishment of organizational objectives. Prerequisites: 1 psychology, social and behavior course and 1 sociology course.

**MGT 311 Human Resource Management.** 3 F, S SS  
Human resource planning, staffing, training and development, compensation, appraisal, and labor relations. Prerequisite: MGT 301

**MGT 352 Human Behavior in Organizations.** 3 F, S SS  
Human aspects of business as distinguished from economic and technical aspects and how they influence efficiency, morale, and management practice. Prerequisite: MGT 301

**MGT 380 Management and Strategy for Nonmajors.** 3 F  
Introduction to the functions and application of management in organizations including controlling, decision making, leadership, motivation, planning and social responsibility.

**MGT 394 ST: Special Topics.** 3 F, S SS  
Current topics in management primarily designed for nonbusiness majors. See the *Schedule of Classes* for current offerings. Some of the following may be offered:

- a. Business Plan Development for Nonmajors
  - b. Small Business and Entrepreneurship for Nonmajors
  - c. Small Business Planning for Nonmajors
- Note that students may not get credit for both Small Business Planning and Business Plan Development.

**MGT 413 Compensation Management.** 3 F, S  
Establishing base and incentive pay with analysis, job evaluation and wage surveys, performance appraisal, conformance to compensation laws. Prerequisites: MGT 311, professional program business student.

**MGT 422 Training and Development.** 3 F, S  
Learning theory, retention and basic evaluation management development resource materials and methods. Prerequisite: MGT 311, professional program business student.

**MGT 423 Employee-Management Relations.** 3 F, S  
Employment relations, union/nonunion setting, Employee management rights, sponsorships, compensation administration, negotiation, union structure and mock government negotiations.

**MGT 424 Employee Selection and Appraisal.** 3 F, S  
Concepts and methods of personnel selection and performance appraisal, job analysis, measurement and evaluation issues. Experiential exercises emphasized. Prerequisite: MGT 311

**NOTE:** For the General Studies requirement, courses and codes such as L1, N3, C and H, see General Studies, page 85. For graduation requirements, see University Graduation Requirements, page 81. For an explanation of additional management courses offered but not listed in this catalog, see Classification of Courses, page 58.

**MGT 433 Management Decision Analysis.** 3 F, S

Decisions making concepts and methods in the private and public sectors and the application to organizational problems. Understanding of individual and group decisions making. Prerequisites: MGT 301 professional program business student

**MGT 434 Social Responsibility of Management.** 3 F, S, SS

Relationship of business to the social system and its environment. Criteria for appraising management decisions. Management as change agents. Prerequisites: MGT 301 professional program business student

**MGT 440 Entrepreneurship.** 3 F, S, SS

Opportunities, risks, and problems associated with small business development and operation.

**MGT 441 Venture Design and Development.** 3 N

Analysis, design and development of a business plan for a new venture. Prerequisite: ACC 240.

**MGT 442 Small Business Management.** 3 N

Students, acting as management consultants, apply business principles and make recommendations to small businesses where they work to manage small firms. Prerequisite: business core except MGT 463

**MGT 445 Business Plan Development.** 3 F, S

Develops a complete strategic business plan, emphasizing the planning process undertaken by successful small business owners and entrepreneurs. Lecture, experiential exercise

**MGT 459 International Management.** 3 F, S, SS

Concepts and practices of multinational and foreign firms. Objectives, strategies, policies and organizational structures for operating in various environments. Prerequisite: MGT 301.

**MGT 463 Strategic Management.** 3 F, S, SS

Strategic formulation and administration of the total organization including integrative analysis and strategic planning. To be taken last semester of senior year. Prerequisites: completion of 108 hours including a other business administration requirements professional program business student. *General Studies L2*

**MGT 468 Management Systems.** 3 F, S

Systems theory and practice applied to organization process and research. Organizations seen as open systems interacting with changing environments. Prerequisite: MGT 301

**MGT 480 Team Management Skills.** 3 F, S

A cooperative education class teaching team skills in active listening, conflict resolution, decisions making, effective meetings, norming and team roles. Cooperative learning.

**MGT 494 ST: Special Topics.** 3) N

Current topics in management primarily designed for business majors. See the *Schedule of Classes* for current offerings. Some of the following may be offered:

- International Management
  - Small Business Planning
  - Total Quality Management and Human Resource Management
- Note that students may not get credit for both Small Business Planning and MGT 445 Business Plan Development

**MGT 502 Organization Theory and Behavior.** 3 A

Important concepts and applications in management including communication decisions making group dynamics leadership motivation organization change and organizational design. Prerequisites: computer literacy; graduate degree program student

**MGT 589 Strategic Management.** (3 F, S)

Formulation of strategy and policy in the organization emphasizing the integration of decisions in the functional areas. Prerequisite: completion of concurrent enrollment in a other core courses in the MBA program

**MGT 591 Seminar.** 3 N

Topics such as the following are offered:

- Business Plan Competition
- Entrepreneurship
- Human Resource Activity and the Management of Diversity
- International Management
- Management Consulting
- Organizational Change and Business Process Consulting

**MGT 593 Applied Projects.** 3 A

Cross functional teams initiate projects by implementation organization change within a local firm. Lecture discussion experiential learning. Prerequisite: completion of concurrent enrollment in a core courses in the MBA program

**MGT 598 ST: Special Topics.** 3 N

Graduate special topics course from human resources strategic management and international management including special topics in international management in Asia or Europe. Prerequisite: instructor approval

**MGT 791 Seminar: Doctoral Seminar in Management.** 1 A

Short module seminars such as:

- Causation Model
- Change and Control
- Cognition: Micro and Macro Perspectives
- Economic Theory of the Firm
- Motivational Attitudes
- Organizational Identity and Definition
- Organizational Learning and Organizational Identity
- Organizational Performance and Reward Systems
- Organizational Strategy and Culture
- Organizational Structure Technology and Information Systems
- Organizational Withdrawal Performance Appraisal
- Power and Organizational Change
- Selection
- Teams Groups and Leadership
- The Craft of Research

**OPERATIONS AND PRODUCTION MANAGEMENT (OPM)****OPM 301 Operations and Logistics Management.** 3 F, S, SS

Identification and integration of major components of operations and logistics management and the impact on organizational productivity and performance. Lecture, lab. Prerequisite: QBA 221

**OPM 394 ST: Special Topics.** 3 N

Current topics in operations and production management primarily designed for nonbusiness majors. See the *Schedule of Classes* for current offerings which may for example include Operations and Logistics Management for nonmajors

**OPM 502 Operations Management.** 3 A

Contemporary management issues including environmental project and supply chain management; new product development; quality control TQM. Prerequisites: computer literacy graduate degree program student

**OPM 540 Quality and Productivity Management.** 3 N

Organizational factors influencing quality and productivity in the production of goods and services. Quality and productivity strategies, improvement programs, and measurement systems. Prerequisite: OPM 502 or instructor approval

**OPM 582 Capacity Management and Scheduling.** 3 A

Decisions regarding management of technology for manufacturing and service firms. Facilities location, layout process design and selection and manufacturing strategy. Prerequisite: QBA 561 or instructor approval

**OPM 585 Facilities Design and Management of Technology.** 3 A

Decisions regarding management of facilities and technology for manufacturing and service firms. Facilities location layout process design and selection. Prerequisite: QBA 561.

**OPM 587 Project Management.** 3 A

Planning scheduling and controlling of projects in R & D manufacturing, construction and services. Project selection financial considerations and resource management. Prerequisite: QBA 502

**OPM 591 Seminar.** 3 A

Topics such as the following offered:

- High Performance Management Systems
- Manufacturing Strategy
- New Product and Process Development

**OPM 593 Applied Projects.** 3 A

Cross functional teams initiate projects by implementation organizational change within a local firm. Lecture discussion experiential learning. Prerequisite: completion of concurrent enrollment in a core courses in the MBA program

**OPM 791 Doctoral Seminars in Operations and Production Management.** 1 N

Short module seminar such as:

- Management of Technology
- Manufacturing Strategy
- Operations Management
- Project Management

**QUANTITATIVE BUSINESS ANALYSIS (QBA)**

For additional QBA courses see Department of Economics

**QBA 450 Operations and Process Analysis.** 3 A  
 Implementation of quantitative techniques for the analysis of quality problems related to operations and process analysis. Prerequisites: OPM 311 QBA 221 *General Studies L2*

**QBA 502 Managerial Decision Analysis.** 3 F, S  
 Fundamentals of quantitative analysis to aid management decisions on making under uncertainty. Prerequisites: MAT 210 computer literacy graduate degree program student

**QBA 505 Management Science.** 3 N  
 Quantitative approaches to decisions on making including near programming and simulation with an emphasis on business applications. Prerequisites: MAT 210 QBA 502

**QBA 550 Intermediate Decision Analysis.** 3 N  
 Quantitative decision analysis methods for business decision making under uncertainty including decision diagrams subjective probabilities and preference assessment. Prerequisites: MAT 210 QBA 502

**QBA 552 Statistical Decision Theory.** 3 N  
 Statistical decision methods for business decisions on making under uncertainty including Bayesian inference optimal statistical decisions and value of information assessment. Prerequisites: MAT 210 QBA 550

**QBA 560 Probabilistic Models.** 3 N  
 Development and application of probabilistic models for quantitative business analysis. Prerequisites: MAT 210 QBA 502

**QBA 561 Mathematical Programming.** 3 N  
 Techniques for solving mathematical programming models of business problems. Prerequisites: MAT 210, 242

**QBA 562 Network Flow Models.** 3 N  
 Introduction to network structure, applications and algorithms development of data structures for network algorithms applied to business problems. Prerequisites: QBA 561 or MAT 242 and QBA 505

**QBA 564 Nonlinear Optimization.** 3 N  
 Basic properties of solutions and algorithms for constrained and unconstrained minimization basic descent methods and barrier methods. Prerequisites: QBA 561 or MAT 242 and QBA 505

**QBA 591 Seminar.** 3 F, S  
 Current topics in Quantitative Business Analysis primarily designed for technology evening and executive MBA students. Elective courses for these programs may include:

- a. Decision Models
- b. Management Problem Solving
- c. Product and Service Innovation
- d. Strategic Decision Analysis

**QBA 791 Doctoral Seminars in Quantitative Business Analysis.** 1 N

The Department of Management has adopted a modular approach to PhD education. Topics such as the following may be offered:

- a. Chaos Theory
- (b) Risk Analysis
- c. Strategic Decisions on Making
- d. Systems Dynamics

**Department of Marketing**

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**PROFESSORS**

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 LASTOVCKA MOKWA L OSTROM REINGEN  
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**ASSOCIATE PROFESSORS**

BLASKO SNHA STEPHENS WALKER

**ASSISTANT PROFESSORS**

NOWLS A OSTROM, ROUNDTREE

**SENIOR LECTURER**

SPERS

Study in the field of marketing involves analysis of how organizations plan, organize, deploy, and control their resources to achieve market objectives. Focus is placed on market forces, growth, and the deployment of firms in competitive markets and on the marketing strategy and tactics of the firm. Through the proper selection of courses, a student may prepare for a career in:

1. advertising and promotion management,
2. business to business marketing,
3. international marketing
4. market research and planning,
5. selling and sales management,
6. services marketing,
7. general marketing management, or
8. retail management

The major in Marketing consists of 18 semester hours. The following courses must be included:

MKT 322 Fundamentals of Marketing Management	3
MKT 304 Consumer Behavior	3
MKT 451 Marketing Research	3
MKT 460 Strategic Marketing	3
<b>Total</b>	<b>12</b>

To complete the major, students, in consultation with their faculty advisors, select six additional hours from among the following list of courses:

MKT 301 Principles of Advertising	3
MKT 311 Principles of Selling	3
MKT 311 Creative Strategy in Marketing	3
MKT 411 Sales Management	3
MKT 412 Promotional Management	3
MKT 424 Retail Management	3
MKT 431 Marketing for Service Industries	3
MKT 434 Industrial Marketing	3

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C and H see General Studies page 85. For graduation requirements see University Graduation Requirements page 81. For an explanation of additional courses offered but not listed in this catalog see Classification of Courses page 58.

MKT 435 International Marketing	3
MKT 454 International	3

## MAJOR PROFICIENCY REQUIREMENTS

Students must receive grades of "C" or higher in upper division courses for the major. If a student receives a grade below "C" in any course in the major, this course must be repeated. If a second grade below "C" is received in either an upper division course in the major already taken or in a different upper division course in the major, the student is no longer eligible to take additional upper division courses in the major.

## GRADUATION REQUIREMENTS

In addition to fulfilling major requirements, students seeking a degree must meet all university and college requirements. See "University Graduation Requirements," page 81 and "College Degree Requirements," page 152.

## GRADUATE PROGRAMS

The department offers a distinctive M.B.A. curriculum in services marketing and management. For more information, see the *Graduate Catalog*.

### MARKETING (MKT)

- MKT 300 Principles of Marketing.** 3 F S, SS  
Role and process of marketing within the society, economy, and business organization. Prerequisite: ECN 112.
- MKT 301 Principles of Advertising.** 3 F S, SS  
Advertising as a communication tool, marketing and business management. Survey of market segmentation, creative strategy media, and effectiveness measures. Prerequisite: MKT 300.
- MKT 302 Fundamentals of Marketing Management.** 3 F S SS  
Marketing planning, implementation and introductory organizations with special emphasis on identifying market opportunities and developing marketing programs. Prerequisite: MKT 300.
- MKT 304 Consumer Behavior.** 3 F S SS  
Application of behavioral concepts in the analysis of consumer behavior and the use of behavioral analysis in marketing strategy formulation. Prerequisite: MKT 300.
- MKT 310 Principles of Selling.** 3 A  
Basic principles underlying the selling process and the practical application in the sale of industrial goods, consumer goods, and intangibles. Prerequisite: MKT 300.
- MKT 311 Creative Strategy in Marketing.** 3 A  
Discussion, application and evaluation of creative concepts and strategies. Creation of a portfolio addressing distinctive advertising/marketing problems and opportunities. Prerequisites: MKT 301, nonbusiness majors must obtain department approval.
- MKT 382 Advertising and Marketing Communication.** 3 F S  
Introduction for non-business majors to the communication process within marketing and advertising. Creation and presentation of an advertisement. Not open to business majors. Prerequisites: junior or senior standing, 2.0 ASU GPA.
- MKT 394 ST: Special Topics.** 3 F  
(a) Global Markets  
(b) Marketing and Design
- MKT 411 Sales Management.** 3 N F S  
Application of management concepts to the administration of the sales operation. Prerequisite: MKT 302.
- MKT 412 Promotion Management.** 3 A  
Integration of the promotional activities of the firm including advertising, personal selling, public relations, and sales promotion. Prerequisite: MKT 302.
- MKT 424 Retail Management.** 3 A  
Role of retailing in marketing. Problems and functions of retail managers within various retail institutions. Prerequisite: MKT 300.

- MKT 430 Marketing For Service Industries.** 3 A  
Concepts and strategies for addressing distinctive marketing problems and opportunities in service industries. Current issues and trends in the service sector. Prerequisites: MKT 300, professional program business student.
- MKT 434 Industrial Marketing.** 3 A  
Strategies for marketing products and services to industrial, commercial, and governmental markets. Changing industry and market structures. Prerequisite: MKT 302, instructor approval.
- MKT 435 International Marketing.** 3 A  
Analysis of marketing strategies developed by international firms to enter foreign markets and to adapt to changing international environments. Prerequisites: MKT 302 or instructor approval, professional program business student.
- MKT 451 Marketing Research.** 3 F S  
Integrated treatment of methods of market research and analysis of market factors affecting decisions in the organization. Prerequisites: with a grade of "C" or higher, MKT 302 and QBA 221.
- MKT 460 Strategic Marketing.** 3 F S  
Policy formulation and decisions in marketing by the marketing executive. Integration of marketing programs and concepts. Development of contemporary marketing issues. Prerequisite: professional program business student. Prerequisites: with a grade of "C" or higher, MKT 302, 304, 451. *General Studies: L2*
- MKT 484 Internship.** 3 F S SS
- MKT 494 ST: Special Topics.** 1-4 F S SS  
Chosen from topics in the marketing and international marketing areas to include seminars in international marketing in Europe and Asia.
- MKT 499 Individualized Instruction.** 1-3 F S SS  
Topics of special interest chosen by students and agreed to by the departments to do independent studies with a professor acting as a guide.
- MKT 502 Marketing Management.** 3 F S SS  
Managing the marketing function: market and environmental analysis, marketing planning, strategy, and control concepts. Development and management of marketing programs. Prerequisite: ECN 502.
- MKT 520 Strategic Perspectives of Buyer Behavior.** 3 N  
Concepts and theories from the behavioral sciences as they relate to marketing strategy formulation. Prerequisite: MKT 502 or equivalent or instructor approval.
- MKT 522 Marketing Information.** 3 N  
Marketing research, marketing information systems, and modern statistical techniques in marketing decisions. Prerequisite: MKT 502.
- MKT 524 Services Marketing.** 3 A  
Strategies for marketing services emphasizing the distinctive challenges and approaches that make marketing of services different from marketing of manufactured goods. Prerequisite: MKT 502 or equivalent.
- MKT 563 Marketing Strategy.** 3 N  
Planning and control concepts and methods for development and evaluation of strategic policy from a marketing perspective. Prerequisite: MKT 502.
- MKT 584 Internship.** 3 F S SS
- MKT 591 Seminar.** 3 A  
Topics such as the following are offered in conjunction with the M.B.A. concentration in services marketing and management: see M.B.A. program section.  
a) Business-to-Business Marketing  
b) Competitive Strategy for Services  
c) Consumer Behavior and Market Strategy  
d) Customer Satisfaction/Service Quality Measurement  
e) International Marketing  
f) Marketing in the Information Age  
g) New Product and Service Development

## Small Business Programs

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The Small Business Programs aim is to become the 21st century leader in business education, practice, and research by providing high quality, relevant programs and information services that enable students and small and growth businesses to participate, contribute, and compete in the global economy.

### MISSION

The Arizona State University College of Business, in collaboration with the Center for the Advancement of Small Business, creates and sustains leading edge, preeminent quality programs in small business for undergraduate students in all disciplines to prepare them for leadership in small and growth businesses.

The programs are learning centered, which help students learn business skills that will position them for success in their careers. The programs are designed to help complement and supplement their major area of expertise, provide them business tools to work effectively in the fast moving world of a small or growth company, or start or acquire a company. The programs are a joint venture between the College of Business and the small business community, a partnership that ensures the academic content and proven successful practices.

### Minor in Small Business

The minor in Small Business consists of 18 hours, with five courses required and one elective. Courses in the program will be held with both day and evening sessions. Attendance at a minimum of three *CaShung In™ Seminars* with local and national experts is also required. *CaShung In™ Seminars* are held generally in the late afternoon and occasionally evenings or Saturdays with on campus, distance, and asynchronous access options available.

Requirements	
COB 380 Small Business Leadership .....	3
COB 381 Small Business Accounting and Finance ..	3
COB 382 Small Business Sales and Market Development ..	3
COB 383 Small Business Working Relationships ..	3
COB 384 Small Business Operations and Planning	3
Elective .....	3
<b>Total</b> .....	<b>18</b>

### Bachelor of Interdisciplinary Studies (BIS) Area of Emphasis in Small Business (BIS Majors only)

The requirements for the small business area of emphasis are identical to those for the minor in Small Business listed

above. For BIS degree requirements, see "Bachelor of Interdisciplinary Studies," page 114.

### Certificate in Small Business and Entrepreneurship

A curriculum in small business and entrepreneurship is only available to business majors at ASU. The certificate requires 15 semester hours of classes of which the following six semester hours must be included:

MGT 440 Entrepreneurship .....	3
MGT 445 Business Plan Development .....	3

The remaining nine semester hours consist of three additional upper-division courses relevant to small business. A copy of the approved electives for business majors pursuing the Certificate in Small Business and Entrepreneurship is available in the Undergraduate Programs Office. To receive the certificate, students must complete the specified business courses with a grade of "C" or higher.

**Small Business and Entrepreneurship Track (College of Business Management Majors only).** See "Small Business and Entrepreneurship," page 167, for the requirements of this program.

## Department of Supply Chain Management

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### ASSOCIATE PROFESSORS

ARANDA, BOHLMAN, BUTLER, CHOI, DAVIS, DUNDAS, ELLFRAM, LEONARD, LOCK, LYNCH, MURRANKA, SIFERD

### ASSISTANT PROFESSORS

AMUNDSON, MALTZ

### SENIOR LECTURER

FLYNN

The faculty in the Department of Supply Chain Management offer courses in four separate areas: legal and ethical studies, management communication, real estate, and supply chain management.

### Legal and Ethical Studies

The legal and ethical studies faculty offer the undergraduate and the Master of Business Administration (MBA) core requirements in legal and ethical studies. In addition, the faculty offer specialized courses in law and ethics.

**NOTE:** For the General Studies requirement, courses and codes such as L1, N3, C, and H, see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Classification of Courses," page 58.

relating to health care, insurance, real estate, and professional sports

**Management Communication**

The management communication faculty serve the College of Business by teaching the BUS core requirement BUS 301 Fundamentals of Management Communication

**Supply Chain Management**

Supply chain management is the management of resources to design, procure, fabricate, produce, assemble, store, distribute, deliver, use, maintain, recycle, and dispose of goods and services.

A "supply chain" consists of interconnected components required to transform ideas into delivered products and services

Supply chain management is a business approach that focuses on integration and partnerships in order to meet customers' needs on a timely basis, with relevant and high quality products, produced and delivered in a cost effective manner.

Current interest in supply chain management stems from the need of world class organizations to purchase, produce, move, and market goods and services on a global basis. Relentless focus on time, cost, and quality have sharpened the need to coordinate and cooperate with business partners around the world in order to meet and exceed customers' needs and wants.

The major in Supply Chain Management consists of the following courses:

SCM 345 Logistics Management	3
SCM 355 Supply Management	3
SCM 432 Materials Management	3
SCM 440 Productivity and Quality Management	3
SCM 455 Research and Negotiation L2	3
SCM 479 Supply Chain Strategy	3
Total	18

**Real Estate**

The real estate faculty offer a unique one year program designed for the students' last year of college. This innovative program emphasizes student involvement with real estate executives on projects in the Phoenix metropolitan area. Students are organized in teams to develop their analytical, communication, and team skills.

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

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

LES 411 Real Estate Law	3
REA 301 Real Estate Law	3
REA 331 Real Estate Finance	3
REA 401 Real Estate Appraisal	3
REA 441 Real Estate Land Development	3
REA 456 Real Estate Investments	3
Total	18

Because of the emphasis on teamwork, interaction with business professionals, and completion of all requirements

within a year, students may enter the program only in the fall semester

**MAJOR PROFICIENCY REQUIREMENTS**

Students must receive grades of "C" or higher in upper division courses for the major. If a student receives a grade below "C" in any course in the major, this course must be repeated. If a second grade below "C" is received in either an upper division course in the major already taken or in a different upper division course in the major, the student is no longer eligible to take additional upper division courses in that major.

**GRADUATION REQUIREMENTS**

In addition to fulfilling major requirements, students seeking a degree must meet all university and college requirements. See "University Graduation Requirements," page 81 and "College Degree Requirements," page 152

**BUSINESS ADMINISTRATION (BUS)**

**BUS 301 Fundamentals of Management Communication.** 3 F, S, SS

Intrapersonal, interpersonal, and administrative communication within management contexts. Prerequisite: CS 200. Prerequisite with a grade of C or higher: ENG 102. *General Studies L1*

**BUS 431 Business Report Writing.** 3 N

Organization and preparation of reports incorporating electronic databases, word processing, and graphics. Prerequisite: BUS 301

**BUS 451 Business Research Methods.** 3 N

Methods of collecting information pertinent to business problem solving including design, collection, analysis, interpretation, and presentation of primary and secondary data. *General Studies L2*

**BUS 502 Managerial Communication.** 1 3 F, S

Analysis of various business problems, situations, and development of appropriate communication strategies. Prerequisite: MGT 502

**BUS 504 Professional Report Writing.** 3 A

Preparation and presentation of professional reports

**BUS 507 Business Research Methods.** 3 N

Techniques for gathering information for business decision making. Selection, design, and completion of a business-oriented research project

**BUS 591 Seminar.** 3 N

Selected managerial communication topics

**BUS 594 Study Conference or Workshop.** 3 N

**BUS 700 Research Methods.** 3 N

**LEGAL AND ETHICAL STUDIES (LES)**

**LES 305 Legal, Ethical, and Regulatory Issues in Business.** 3 F, S

Legal theories, ethical issues, and regulatory matters affecting business policies and decisions

*For students in the College of Business: LES 306 and 307 together or their equivalents are not acceptable in lieu of LES 305*

**LES 306 Business Law.** 3 A

Legal and ethical aspects of contracts, sales, commercial paper, secured transactions, documents of title, letters of credit and bank deposits and collections

**LES 307 Business Law.** 3 A

Legal and ethical aspects of agency, partnerships, corporations, bankruptcy, antitrust, securities, and other regulation of businesses

**LES 308 Business and Legal Issues in Professional Sports.** (3 N

The economic structure of professional sports and application of contract, antitrust, arbitration, and labor laws in the industry. Prerequisites: 2.00 GPA, junior standing

**LES 380 Consumer Perspective of Business Law.** 3 F, S

Role of law as it affects society. Case studies are used to present principles that govern business and consumers. Lecture/television. Prerequisites: 2.00 GPA, junior standing

**LES 411 Real Estate Law.** 3 A

Legal and ethical aspects of a d wnership interests transfer f nance development and regulations of the real estate industry

**LES 532 Negotiation Agreements.** 3 F S

Course develops negotiation competencies to build partnerships and create negotiating agreements with internal external customers suppliers work teams and external consultants. Lecture and substantial student interaction through team exercises

**LES 579 Legal and Ethical Issues for Business.** 3 F S

Study of legal and ethical components of business decisions self regulation and social responsibility as strategies Prerequisites ACC 503 FN 502, MGT 502 MKT 502

**REAL ESTATE (REA)****REA 251 Real Estate Principles** 3 N

Regulation practices legal aspects and professional opportunities of the real estate industry Cannot be applied to Real Estate major

**REA 300 Real Estate Analysis.** 3 A

Application of economic theory and analytical techniques to real estate markets Topics include law finance appraisal market analysis, investments development Prerequisite professional program business student

**REA 331 Real Estate Finance.** 3 A

Legal market and institutional factors related to financing proposed and existing properties Emphasis on current financing techniques and quantitative methods Prerequisites FN 300 professional program business student

**REA 380 Real Estate Fundamentals** 3 F S

Real estate for the student/consumer with an emphasis on the applied aspects of each area of real estate specialization Prerequisites 2.00 ASU GPA junior standing not pending Real Estate majors

**REA 394 ST: Special Topics.** 3 N

(a) Real Estate Fundamentals

**REA 401 Real Estate Appraisal.** 3 A

Factors affecting the value of real estate Theory and practice of appraisal and preparation of appraisal report Appraisal techniques Prerequisites REA 300 professional program business student

**REA 441 Real Estate Land Development.** 3 A

Neighborhood activity growth Municipal planning and zoning Development of residential commercial industrial and special purpose properties Prerequisites REA 300 professional program business student

**REA 456 Real Estate Investments.** 3 A

Analysis of investment decisions for various property types Cash flow and rate of return analysis Prerequisites FN 300 professional program business student

**REA 461 Current Real Estate Topics.** 3 N

Current real estate topics of interest are discussed and analyzed. Prerequisites REA 300 professional program business student.

**REA 591 Seminar in Selected Real Estate Topics.** 3 N

Topics may be selected from the following.

- Real Estate Development
  - Development process covering feasibility site selection planning design financing and construction Relationship of a d use controls and regulations to the private sector
- Real Estate Finance and Investments
  - Basic techniques for analyzing the financial feasibility of real estate investments includes cash flow yield and risk analysis taxation form of ownership and management
- Real Estate Market Analysis
  - Analytical techniques used in performing market research to assess the feasibility of proposed residential, retail office, and other developments
- Real Estate Research
  - Reviews current research in areas such as market studies mortgage security valuation development investments and government regulation

**SUPPLY CHAIN MANAGEMENT (SCM)****SCM 301 Purchasing/Materials and Logistics Management.** (3 N)

Examines the purchasing materials, and goods management areas techniques for acquiring storing processing and moving materials inventory are presented Prerequisite professional program business student

**SCM 345 Logistics Management.** (3 F S)

Managing logistics activities with emphasis on integrating a sporta tion needs with inventory warehouseing facility location customer service packaging and materials handling Prerequisites OPM 301 prerequisite a program business student

**SCM 355 Supply Management.** 3 F S

Management of the supply function including organization procedures selection quality inventory decisions and price determination Prerequisite professional program business student

**SCM 405 Urban Transportation.** 3 N

Economic social political and business aspects of passenger transportation Public policy and government aid to urban transportation development Prerequisite upper division standing or instructor approval

**SCM 432 Materials Management.** 3 F S

Study of managing the product flow of materials in organization, including MRP JIT quality factory planning and job design. Prerequisites OPM 301, professional program business student.

**SCM 440 Productivity and Quality Management.** (3) F S

Productivity concepts at the national, organizational and individual levels Quality management and its relationship to productivity in organizations. Prerequisite professional program business student

**SCM 455 Research and Negotiation.** 3 F, S

Current philosophy, methods and techniques used to conduct both strategic and operational supply chain management research and negotiation includes negotiation simulations Prerequisites SCM 355, professional program business student. *General Studies. L2*

**SCM 460 Carrier Management.** 3 N

Analysis of carrier economics regulation management and rate making practice evaluation of public policy issues related to carrier transportation Prerequisite upper-division standing instructor approval

**SCM 463 International Transportation and Logistics.** (3) A

Logistics activities in international business with special emphasis on transportation global sourcing customs issues and facility location in international environment Prerequisite SCM 345 or instructor approval

**SCM 479 Supply Chain Strategy.** 3 F S

Synthesis of purchasing production transportation to provide systems perspective of materials management Development of strategies Prerequisites SCM 345 432 professional program business student Prerequisite with a grade of C+ or higher SCM 355

**SCM 532 Supply Chain Design and Development Strategies.** (3) F

A strategic orientation toward the design and development of the supply chain for purchasing, materials and logistics systems

**SCM 541 Supply Chain Management and Control.** (3) S

Management and control of purchasing and logistics management systems Total Quality Management to assess and assure customer satisfaction in Global strategies

**SCM 545 Supply Chain Continuous Improvement Strategies.** 3 S

Leading edge strategies such as reengineering high-performance teams and expert systems for continuous improvement of the supply chain Seminar

**SCM 591 Seminar.** 3 N

Topics such as the following are offered

- Logistics and Transportation
- Purchasing

**SCM 791 Doctoral Seminar.** 3 A

Topics may be selected from the following

- Logistics, Transportation and Physical Distribution Management
- Purchasing and Materials Management

**NOTE:** For the General Studies requirement courses and codes such as L1 N3 C and H see General Studies page 85 For graduation requirements see University Graduation Requirements page 81 For an explanation of additional omnibus courses offered but not listed in this catalog see Classification of Courses page 58

# College of Education

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David C. Berliner, Ph.D.  
Dean



Farmer Education Building atrium

John MacIsaac photo

<b>Division of Curriculum and Instruction . . . . .</b>	<b>185</b>
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## PURPOSE

For students, choosing a professional college is an important step because it establishes the foundation on which a career will be built. The College of Education provides a stimulating, challenging forum wherein scholars and practitioners interact in the discovery and mastery of the science and art of educational endeavors. This balanced approach, in which research and practice are viewed as essential and complementary, enables the college to produce superior educators.

The purposes of the faculty of the College of Education are as follows:

1. to engage in the scholarly, scientific, and professional study of education;
2. to prepare competent professionals who will serve in a variety of critical educational roles;
3. to develop productive scholars who will make significant contributions to the educational literature and to the quality of educational practice; and
4. to serve the education profession at the local, national, and international levels.

In accord with these purposes, the College of Education is committed to producing quality scholarship and research and to excellence in teaching.

Information about the college can be found on the Web at [tikkun.ed.asu.edu/coe](http://tikkun.ed.asu.edu/coe)

## ORGANIZATION

The College of Education is organized into three divisions. These divisions and their academic program areas are listed below.

### Division of Curriculum and Instruction

Early Childhood Education  
Educational Media and Computers  
Elementary Education  
Multicultural Education  
Reading and School Library Science  
Secondary Education  
Special Education

### Division of Educational Leadership and Policy Studies

Education Policy Studies  
Educational Administration and Supervision  
Higher and Postsecondary Education

### Division of Psychology in Education

Counseling Psychology  
Counselor Education  
Learning and Instructional Technology  
Lifespan Developmental Psychology  
Measurement, Statistics, and Methodological Studies  
School Psychology

Services to students and the community are provided through the centers and offices described below.

**Center for Bilingual Education and Research.** The Center for Bilingual Education and Research (CBER) conducts, supports, and encourages research in the field of dual language education. The purpose of the Center's work is to inform public policy. CBER is also engaged in research, program development, and scholarly discourse aimed at

improving public education in the border regions of the United States. The center gives special attention to the needs of Spanish-speaking students.

**Center for Indian Education.** The Center for Indian Education serves as a service agency to Native American communities, school districts, and students attending ASU. The center also conducts research in Indian education in Arizona and other states with American Indian populations.

**Office of Student Affairs.** The Office of Student Affairs assists individuals interested in teacher preparation programs through advising, admission, and retention activities and certification assistance. Other services include program of study validation, petition review, student communication, and high school and community college articulation relations. In addition, the office provides support services through tutorial assistance and scholarship programs.

**Office of Professional Field Experiences.** The Office of Professional Field Experiences places a teacher preparation student in public schools and similar institutions for internships and student teaching, monitors students' progress in their field experiences, sponsors courses for mentor teachers, and conducts research on student performance in the field.

**Center for Academic Precocity.** The Center for Academic Precocity provides academic services to intellectually advanced students in grades pre-K-12. These services include individual assessment, talent identification, and a variety of courses.

**Counselor Training Center.** The Counselor Training Center provides counseling for ASU students, staff, and the community at large in personal and career development, stress management, and marriage and family issues. Counseling is conducted by graduate students in counseling and counseling psychology under the supervision of certified psychologists.

**Other Units.** Other units within the college offering specialized research and educational services include the College of Education Preschool-Arizona Educational Information System, and Technology Based Learning and Research.

## Teacher Education

Programs that prepare students for teacher certification by the state are available to both the undergraduate pursuing a first degree and the individual with a college degree in a noneducation field.

Undergraduate students interested in teacher certification in art, music, dance, or theatre enroll through programs offered by the College of Fine Arts. These students must also meet the same eligibility requirements for admission to the Professional Teacher Preparation Program (PTPP).

Undergraduate programs leading to the Bachelor of Arts in Education degree are described in the text and tables that follow. Descriptions of graduate degree programs can be found in the *Graduate Catalog*. For more information, see the "College of Education Graduate Degrees and Majors" table, page 183.

### College of Education Baccalaureate Degrees and Majors

Major	Degree	Administered by
Early Childhood Education	B.A.E.	Division of Curriculum and Instruction
Elementary Education	B.A.E.	Division of Curriculum and Instruction
Concentration: bilingual education/English as a second language		
Secondary Education	B.A.E.	Division of Curriculum and Instruction
Academic specializations: biological sciences; business education; chemistry; Chinese; communication; economics; English; family resources and human development (home economics); French; geography; German; History; Japanese; journalism; mathematics; mathematics chemistry; mathematics physics; physical education; physics; physics chemistry; political science; Russian; social studies; Spanish		
Selected Studies in Education-	B.A.E.	College of Education
Special Education	B.A.E.	Division of Curriculum and Instruction

This program is also hosted at ASU East

Applications are not being accepted at this time.

#### ADMISSION

##### Preprofessional Admission

Students admitted to ASU during their freshman and sophomore years may also be admitted to the College of Education with preprofessional status. Preprofessional students should seek advising within the College of Education through its Office of Student Affairs, EDB 7.

Admission to ASU with preprofessional status in the College of Education does not guarantee admission to the PTPP. Admission to the PTPP is a separate process.

##### Professional Program Admission

Students are eligible for consideration for admission to the PTPP if they meet the following criteria:

1. admission to ASU as a classified student;
2. a minimum cumulative GPA of 2.50;
3. completion of at least 56 semester hours by the time of PTPP admission;
4. submission of scores for the Pre-Professional Skills Test (PPST) or the American College Test (ACT) (a minimum score of 18 is required for submitting an application; a score of 21 or higher is required for regular admission);
5. completion of ENG 101 and 102 and General Studies L1 or S1 and N1 requirements with a grade of "C" or higher (courses in progress do not satisfy this requirement), and
6. a special application with additional supporting materials (great emphasis is placed on prior experience, paid or volunteer, working with the age or group of the certification area sought).

Admission is competitive and not guaranteed to all who satisfy the minimum admission criteria.

Some academic units have additional requirements. Students seeking admission to K-12 or secondary education programs should consult the Office of Student Affairs in the College of Education (480-965-3877) to determine if there

are additional admission requirements for their teaching fields.

PTPP application deadlines are February 15 for fall admission and September 15 for spring admission. Applicants should contact the Office of Student Affairs for an application.

Because PPST or ACT scores must be included for an application to be complete, applicants should plan to take the test *well in advance* of application deadlines.

##### Transfer Students

To be considered for admission to the PTPP, transfer students must first be formally admitted to ASU (see "Transfer Applicants," page 63). Transfer students must also meet all PTPP admission requirements and should contact the Office of Student Affairs within the College of Education for admission procedures and advising. ASU Undergraduate Admissions should receive the application for admission to ASU, transcripts, applicable test scores, and other required information at least three months before the PTPP application deadline date for the desired PTPP admission semester.

Students completing their first two years of course work at a community college or at a four-year institution in Arizona other than ASU should consult an advisor in Cross-college Advising Services in planning a sequence of courses that will meet the ASU General Studies requirements. Students should access the ASU Education Transfer Guides for optimal course selection at [www.asu.edu/provost/articulation](http://www.asu.edu/provost/articulation).

##### Program of Study

A program of study must be filed during the first semester of enrollment in the PTPP. Preprofessional students completing 87 hours (the university limit for registering without a program of study) who have not been admitted to the PTPP are provided a registration waiver by the College of Education. See "University Graduation Requirements," page 81.

## ADVISING

All students pursuing teaching certificates should seek early advising from the Office of Student Affairs in the College of Education, 480-965-3877. Careful planning and early advising in developing an approved program of study are essential if teacher candidates are to complete certification and graduation requirements within the typical 120 semester hour undergraduate degree program.

**Mandatory Advising.** Transfer students are required to meet with an academic advisor before registering for their first semester classes. Freshmen must meet with an advisor before registering for each of their first two semesters.

## DEGREES

### Bachelor of Arts in Education

The faculty in the College of Education offer the Bachelor of Arts in Education (B.A.E.) degree. See the "College of Education Baccalaureate Degrees and Majors" table, page 178, for more information. Candidates for the Bachelor of Arts in Education degree must complete the Professional Teacher Preparation Program (PTPP) offered by the College of Education. Graduates of this program are able to demonstrate proficiency in specified knowledge areas or skills, including the following:

1. principles and application of effective instruction;
2. classroom organization and management;
3. content or subject matter;
4. specific curriculum and teaching strategies;
5. interrelationship of culture and schooling in a multicultural society;
6. human development;
7. communication skills;
8. theories of learning and motivation;
9. assessment and evaluation; and
10. computer literacy.

Each student in the PTPP selects one of five major areas that provide specialized instruction and preparation. The program areas are:

1. Bilingual/ESL Education,
2. Early Childhood Education (birth-third grade),
3. Elementary Education,
4. Secondary Education, and
5. Special Education.

Students in Secondary Education may be certified for grades 7-12 in a specific academic specialization. Students in art, foreign languages, music, or physical education complete a K-12 endorsement in their field. Special Education majors may be certified for grades K-12 in mental retardation (MR), emotionally disabled (ED), or learning disabilities (LD).

### PTPP Areas and Options or Endorsements

- Early Childhood Education
- Elementary Education
  - bilingual education
  - English as a second language
- Secondary Education
  - certification in specific academic specializations

- K-12 endorsements in art, music, or physical education

- Special Education
  - emotionally disabled
  - learning disabilities
  - mental retardation

PTPP students in areas other than Special Education complete a common core of courses as well as courses specific to the area or option selected. Early Childhood Education and Elementary Education prepare students for certification by the state in grades K-8. Students who select these majors develop the knowledge and skills needed to teach children from a variety of language, cultural, and developmental backgrounds. The Early Childhood Education concentration prepares students to work in infant programs, preschools, and grades K-3. The Elementary Education bilingual education/English as a second language (ESL) concentration prepares students to work in bilingual/ESL settings in grades K-8. The Special Education major prepares students to teach mildly handicapped students in diverse settings and for certification in grades K-12 in MR, ED, or LD. Students completing the Elementary Education major must also complete the human development requirements and an academic specialization.

Secondary Education offers programs that prepare students for certification by the state in specific academic subjects in grades 7-12. Students with teaching majors in the College of Fine Arts earn the appropriate bachelor's degree from that college.

Courses for the academic specialization are determined by the faculty in the academic discipline. Therefore, students with majors in Secondary Education in the College of Fine Arts have two academic advisors: one in the college and department of the academic specialization and one in the Office of Student Affairs in the College of Education. For more information, refer to "Academic Specialization" page 181.

## UNIVERSITY GRADUATION REQUIREMENTS

In addition to fulfilling college and major requirements, students must meet all university graduation requirements. For more information, see "University Graduation Requirements," page 61.

### General Studies Requirement

All students enrolled in a baccalaureate degree program must satisfy a university requirement of a minimum of 35 hours of approved course work as described in "General Studies," page 85. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses. General Studies courses are listed in the General Studies section in the course descriptions, in the *Schedule of Classes*, and in the *Summer Sessions Bulletin*.

Preprofessional students should complete as many of the General Studies courses as possible before admission to the PTPP. Students are encouraged to consult with an academic advisor to ensure they comply with all necessary requirements.

## COLLEGE DEGREE REQUIREMENTS

A minimum of 120 semester hours are required for the B.A.E. degree in these categories:

### College of Education Graduate Degrees and Majors

Major	Degree	Administered by
Counseling	M.C.	Division of Psychology in Education
Course in Psychology	Ph.D.	Division of Psychology in Education
Counselor Education	M.Ed.	Division of Psychology in Education
Curriculum and Instruction Concentrations: bilingual education, communication arts, early childhood education, elementary education, English as a second language, Indian education, mathematics education, multicultural education, reading education, science education, secondary education, social studies education	M.A., M.Ed.	Division of Curriculum and Instruction
Curriculum and Instruction Concentrations: bilingual education, communication arts, curriculum studies, early childhood education, elementary education, English as a second language, Indian education, mathematics education, multicultural education, reading education, science education, secondary education, social studies education	Ed.D.	Division of Curriculum and Instruction
Curriculum and Instruction Concentrations: curriculum studies, early childhood education, educational media and computers, elementary education, English education, exercise and wellness education, music education, physical education, reading education, science education, special education	Ph.D. <sup>2</sup>	Interdisciplinary Committee on Curriculum
Educational Administration and Supervision	M.Ed., Ed.D.	Division of Educational Leadership and Policy Studies
Educational Leadership and Policy Studies	Ph.D.	Division of Educational Leadership and Policy Studies
Educational Media and Computers Concentration: business education	M.Ed.	Division of Curriculum and Instruction
Educational Psychology	M.A., M.Ed.	Division of Psychology in Education
Educational Psychology Concentrations: developmental psychology, measurement, statistics, instructional logic, studies in school psychology	Ph.D.	Division of Psychology in Education
Higher and Postsecondary Education Concentration: Higher Education	M.Ed., Ed.D.	Division of Educational Leadership and Policy Studies
Health and Instructional Technology	M.A., M.Ed.	Division of Psychology in Education
Learning and Instructional Technology Concentrations: instructional technology, learning	Ph.D.	Division of Psychology in Education
Social and Philosophical Foundations of Education	M.A.	Division of Educational Leadership and Policy Studies
Special Education Special Education Concentrations: gifted/mildly handicapped, multicultural/exceptional/severely multiply handicapped	M.A., M.Ed.	Division of Curriculum and Instruction Division of Curriculum and Instruction

Applicants are being accepted at this time.

The program is administered jointly by the College of Education and the Graduate College. See Graduate College page 3.

Academic preparation:  
human development, Bilingual English as a Second Language Education, Family Childhood Education, and Elementary Education majors only, and  
PTPP

The College of Education expects its degree candidates to meet individual course assessment standards, field experience/observation criteria, courses required for teacher certification, and other proficiency standards and performance criteria required to demonstrate knowledge and skill in the areas listed under "Bachelor of Arts in Education," page 179.

**Academic Specializations**

Academic Specialization	Page
Art education <sup>1</sup>	266
Biological sciences	343
Business education-	
Chemistry	348
Chinese	383
Communication	449
Dance education	276
Economics <sup>2</sup>	
English	355
French	383
Geography	368
German	383
History	374
Home economics (family studies child development)	364
Japanese	383
Journalism	454
Mathematics	395
Mathematics chemistry	395
Mathematics physics	395
Music <sup>3</sup>	280
Physical education	360
Physics	408
Physics chemistry	408
Political science	417
Russian	383
Social studies	426
Spanish	383
Theatre education	297

Art education, dance education, and theatre education concentrations are under corresponding B.F.A. majors

<sup>1</sup> See an advisor for details

<sup>3</sup> Students focus on either the choral/general music or instrumental music concentration under the B.M. degree

**Program Requirements**

Progress toward the B.A.E. degree involves meeting university, college, and division requirements. The degree program also includes courses and academic content required for teacher certification by the State of Arizona. Students seeking certification in one of the fine arts must complete degree requirements in the College of Fine Arts and specified courses through the PTPP.

**MAJOR REQUIREMENTS**

**Academic Specialization**

Courses in the academic specialization give students a greater depth of knowledge in one academic area. Elementary Education majors complete 18 hours in a single academic subject. A Secondary Education major completes 36 to 60 hours, depending upon the area, in the subject in which the student wishes to be certified; fine arts may require more. Teacher candidates should confer with the Office of Student Affairs regarding acceptable academic

specializations. Refer to the pages shown in the "Academic Specializations" table.

**Human Development**

The programs that prepare students for teacher certification by the state in elementary and early childhood education require students to complete 15 credits selected from specific human development courses pertinent to the teaching area. Teacher candidates should confer with an academic advisor in the Office of Student Affairs regarding course selection.

**Professional Teacher Preparation Program (PTPP)**

The PTPP is a four-semester sequential program consisting of 36 to 58 semester hours. Ranging from nine to 16 hours per semester, the courses for one semester must be completed before enrolling in the next semester. In other words, courses for one semester usually may not be taken at the same time as those scheduled for another semester. In addition to the PTPP courses, students continue completing the General Studies requirement and human development and academic specialization requirements through the third semester of the program.

**Four-Semester Requirements  
Professional Teacher Preparation Program  
Elementary Education (K-8) Major**

**Semester I**

DCI 396 Field Experience	3
EED 433 Language Arts Methods, Management, and Assessment in the Elementary School	3
EED 455 Social Studies Methods, Management, and Assessment in the Elementary School	3
EMC 300 Computers in Education	1
SPF 301 Culture and Schooling L2	3

Total ..... 10

**Semester II**

DCI 397 Field Experience II	0
EED 421 Science Methods, Management, and Assessment in the Elementary School	3
EED 480 Mathematics Methods, Management, and Assessment in the Elementary School	3
SPE 394 ST Quality Practices in the Collaborative Classroom	3

Total ..... 9

**Semester III**

EED 444 Organizing the Classroom Culture	1
EED 496 Field Experience	3
RDG 414 Teaching Reading/Decoding	3
RDG 481 Reading Practicum	3

Total ..... 7

**Semester IV**

EED 478 Student Teaching in the Elementary School	10-12
SPF 401 Theory and Practice in Education	1

Total ..... 11-13

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C, and H, see General Studies, page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Classification of Courses," page 58.

**Elementary Education (K-8) Major  
with a Concentration in  
Bilingual Education/English as a Second Language**

**Semester I**

BLE 400 Principles of Language Minority Education	3
BLE 455 Social Studies Methods, Management, and Assessment in Elementary BLE/ESL Settings	3
DCI 396 Field Experience I (6 hours week)	6
EMC 300 Computers in Education	1
SPF 301 Culture and Schooling L2	3
<b>Total</b>	<b>10</b>

**Semester II**

BLE 409 Language Sensitive Content Teaching	3
BLE 420 Science Methods, Management and Assessment in BLE/ESL Settings	3
BLE 48 Math Methods, Management and Assessment in Elementary BLE/ESL Settings	3
DCI 397 Field Experience II (8 hours week)	0
MCE 447 Diversity in Families and Communities in Multicultural Settings	3
<b>Total</b>	<b>2</b>

**Semester III**

BLE 414 Reading Methods, Management, and Assessment in BLE/ESL Settings	3
BLE 433 Language Arts Methods, Management, and Assessment in Elementary BLE/ESL Settings	3
BLE 481 Reading Practicum	3
DCI 397 Field Experience II (8 hours week)	0
SPE 394 ST Quality Practices in the Collaborative Classroom	3
<b>Total</b>	<b>12</b>

**Semester IV**

BLE 478 Student Teaching in the Elementary School	10-12
SPF 401 Theory and Practice in Education	1
<b>Total</b>	<b>11-13</b>

**Early Childhood Education Major with  
K-8 Teacher Certification**

**Semester I**

ECD 300 Principles of Interprofessional Collaboration	3
ECD 400 Inquiry into Teaching and Learning	3
ECD 403 Educational Environments: Preschool Kindergarten/Primary Grades	3
ECD 496 Field Experience	0
EMC 300 Computers in Education	1
SHS 320 Facilitating Speech and Language Development in Early Childhood	3
<b>Total</b>	<b>13</b>

**Semester II**

ECD 315 Classroom Organization and Guidance in the Early Years	2
ECD 402 Integrated Curriculum and Assessment Math and Science	3
ECD 404 Teaching Reading and Language Arts in Early Childhood	3
ECD 405 Practicum in Teaching Reading and Language Arts in Early Childhood	2
ECD 496 Field Experience	0
MCE 447 Diversity in Families and Communities in Multicultural Settings	3
<b>Total</b>	<b>13</b>

**Semester III**

ECD 401 Integrated Curriculum and Assessment Social Studies and Creative Arts	3
ECD 414 Interpretational Practicum	3
ECD 496 Field Experience	0
SPE 394 ST Quality Practices in the Collaborative Classroom	3
<b>Total</b>	<b>9</b>

**Semester IV**

EED 478 Student Teaching in the Elementary School	10-12
SPF 401 Theory and Practice in Education	1
<b>Total</b>	<b>11-13</b>

**Secondary Education (7-12) Major**

**Semester I**

DCI 396 Field Experience I	0
EDP 333 Human Development L2	3
EDP 310 Educational Psychology SB	2
SPF 301 Culture and Schooling L2	3
<b>Total</b>	<b>8</b>

**Semester II**

DCI 397 Field Experience II	0
EDP 310 Educational Psychology SB	1
EMC 300 Computers in Education	1
RDG 30 Literacy and Instruction in the Content Areas	3
SED 400 Principles of Effective Instruction in Secondary Education	3
<b>Total</b>	<b>8</b>

**Semester III**

SED 403 Principles, Curriculum, and Methods	3
SED 496 Field Experience	0
SPE 394 ST: Quality Practices in the Collaborative Classroom	3
Methods courses in academic specialization	3
<b>Total</b>	<b>9</b>

**Semester IV**

SED 478 Student Teaching in the Secondary Schools	10-12
SPF 401 Theory and Practice in Education	1
<b>Total</b>	<b>11-13</b>

**Special Education (K-12) Major**

**Semester I**

SPE 311 Orientation to Education of Exceptional Children SB	3
SPE 314 Introduction to Bilingual/Multicultural Special Education	3
SPE 36 Introduction to Learning Disabilities	3
SPE 394 ST: Basic Special Education Curriculum	3
SPE 498 PS: Field Experience	1
SPF 301 Culture and Schooling L2	3
<b>Total</b>	<b>16</b>

**Semester II**

SPE 317 Mentoring/Internship	3
SPE 336 Behavioral and Emotional Problems Children	3
SPE 417 Evaluation of Exceptional Children	3
SPE 413 Methods in Language Reading and Arithmetic for Exceptional Children	3
SPE 495 PS Field Experience	3
<b>Total</b>	<b>15</b>

**Semester III**

SPE 411	Parent Involvement and Regulatory Issues	3
SPE 414	Methods and Strategies in Behavior Management	3
SPE 415	Social Behavior Problems of Exceptional Children	3
SPE 494	Instruction in Content Areas: Science and Social Studies	3
SPE 498	PS: Field Experience	3
Total		15

**Semester IV**

SPE 478	Student Teaching in Special Education (one certification area)	12
Total		12

SPE 311, 312, 314, 336, and 361 may be taken before formal PTPP admission. Satisfactory completion of these courses does not guarantee admission to the PTPP.

**Field Experience Requirements**

In addition to course work, students admitted to the PTPP are required to participate in directed field experiences during each of the four semesters of the program. The field experiences progress from short term observation and participation to long term supervised practice teaching.

Students should expect these field experiences to be above and beyond the class times listed in the *Schedule of Classes* for each semester. Such field experiences typically take place in public schools throughout the greater Phoenix area. Regular attendance is required during all field experiences. Students should plan extra travel time and expect to confer with placement teachers and field facilitators before or after scheduled field experiences. To meet field experience requirements, students must plan to have their own transportation and *be available during regular school hours*.

Teaching is a highly demanding and extraordinarily complex profession. Students desiring to become teachers must maintain academic standards and demonstrate requisite qualifications for successful teaching, including effective interpersonal skills, basic communication skills, appropriate professional conduct, and satisfactory performance during field experience assignments.

Observation and participation assignments in the schools during first, second, and third semester field experience placements are designed to prepare students for the highly demanding performance based student teaching during semester four.

**Student Teaching.** The culminating field experience, called *student teaching*, occurs in the fourth semester of the PTPP and is a full day, full semester obligation. Student teaching is usually possible only during fall and spring semesters.

**Admission to Student Teaching (Semester IV).** To be admitted to student teaching, a student must have attained a high level of professional standards in previous field experience assignments and meet the following requirements.

1. be in good standing as defined in this policy,
2. have no incompletes in PTPP courses,

3. complete all PTPP courses, with the exception of SPF 401; and
4. have an approved program of study on file

There are additional requirements for certain programs. Secondary Education majors may have no more than two required courses remaining in the academic specialization and have no more than two courses to complete in General Studies. Students must also receive approval from their specialization advisor.

Elementary and Special Education majors must have completed all human development courses, all methods courses, and may only have two additional courses to complete.

Students must complete the application procedure and approval to student teach from the Office of Professional Field Experiences at least 10 weeks before the beginning of the student teaching term. Student teachers must adhere to the calendar, regulations, and philosophy of the schools in which they are placed. Beginning and ending dates for student teaching are determined by the Office of Professional Field Experiences in cooperation with the placement schools. Because student teaching is on a full day schedule, 8:00 A.M. to 4:00 P.M. Monday through Friday for 15 consecutive weeks, student teachers are strongly encouraged to avoid extra activities and course work that would interfere with the heavy demands placed upon them while student teaching.

**ACADEMIC STANDARDS**

**Preprofessional Status**

Students admitted to the College of Education on *preprofessional status* are subject to the general standards of academic good standing of the university. However, students who maintain standards of academic good standing during their freshman and sophomore years do not necessarily qualify for admission to any teacher preparation program offered by the College of Education.

**Professional Program Status**

Students admitted to the PTPP within the College of Education must maintain academic standards and demonstrate requisite qualifications for successful teaching, including sound physical and mental health, interpersonal skills, basic communication skills, a positive attitude, appropriate professional conduct, and satisfactory performance in field experiences. Because PTPP standards are higher than those for the university, a student who is suspended from the PTPP may still be eligible to enroll in other non PTPP courses.

A copy of the Retention and Disqualification Policy for the PTPP may be obtained from the Office of Student Affairs, EDB 7.

College of Education faculty and placement teachers will routinely review preservice teachers' professional attributes and characteristics to determine if the student is making satisfactory progress at both midterm and final. To maintain good standing, students will need to demonstrate appropriate professional demeanor in field placements and college classes.

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C, and H see "General Studies" page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Classification of Courses" page 58.

Students demonstrating behaviors or characteristics that make it questionable whether they can succeed in the teaching profession are reviewed by the director of the Office of Professional Field Experiences and the director of the Division of Curriculum and Instruction. If necessary, a review panel composed of faculty members who have had direct involvement with the student is convened. Following this review, the student may be referred to the Division of Curriculum and Instruction Standards and Appeals Committee. The committee's review may result in a decision to disqualify the student or the specification of conditions under which continued participation is permitted, i.e., probation.

Students who wish to appeal decisions of the Division of Curriculum and Instruction Standards and Appeals Committee may do so in writing to the dean of the College or the Main Campus Standards Committee. Any exceptions to the retention and disqualification policies and procedures must be approved by the Division of Curriculum and Instruction Standards and Appeals Committee and the dean of the College of Education.

### Postbaccalaureate Programs for Initial Teacher Certification

Postbaccalaureate programs that prepare students for initial teacher certification by the state are designed for those who hold a bachelor's degree in an area other than education. The college offers postbaccalaureate programs in early childhood education, elementary education, secondary education, and special education. Special education students must qualify for and be concurrently admitted to a master's degree program in special education. Information on postbaccalaureate programs is available through the Office of Student Affairs, EDB 7. The office provides academic advising and information regarding requirements, procedures, and deadline dates.

A student who wishes to be considered tentatively must meet the College of Education admission requirements for postbaccalaureate programs.

1. an earned bachelor's degree from an accredited institution;
2. a cumulative GPA of 2.50 or higher for the last 60 semester hours of credit earned;
3. submission of a completed application form and supporting materials by the appropriate deadline dates during the semester before admission; and
4. completion of an academic specialization for secondary education (consult the Office of Student Affairs, EDB 7).

Admission to postbaccalaureate programs is selective. Not all students who meet the minimum requirements are admitted to the program.

### Student Teaching

Students in a postbaccalaureate program for initial teacher certification must file student teaching applications early in the semester before the student teaching term. Application deadlines are October 15 for spring semester and February 15 for fall semester. To be accepted for student teaching, students must:

1. attain a cumulative GPA of 2.50 or higher in required professional education course work,

2. complete all required professional education course work other than one preapproved course that can be taken concurrently with student teaching (Secondary Education students must also receive approval from their academic specialization advisors);
3. remove all academic deficiencies such as grades of "D," "E," or "F" before placement; and
4. obtain a final approval from the Office of Professional Field Experiences (this review considers performance in field settings and academic achievement).

### Certification for Teaching

The curricula for both the undergraduate and postbaccalaureate teacher education programs meet the requirements for teacher certification in the State of Arizona.

In addition to the course requirements specified in this catalog, there are other requirements for teacher certification mandated by the State of Arizona including the U.S. Constitution and Arizona Constitution requirement. Some teaching areas have specific math, science, and fine arts requirements.

Because these requirements vary over program areas and may be changed at any time, students are encouraged to maintain close contact with the Office of Student Affairs regarding the most current state certification requirements.

The College of Education is approved by the Arizona Department of Education for the preparation of elementary, secondary, and special education teachers. Students who complete an approved program of study and meet all graduation requirements of the university and the college are recommended for certification to the Arizona Department of Education. The Office of Student Affairs maintains information about current certification requirements in Arizona and other states.

The College of Education also offers courses for certified teachers leading to special endorsements by the Arizona Department of Education. Of special interest are endorsements in the areas of bilingual education, English as a second language (ESL), middle school education, reading, and school library science. The bilingual education endorsement is required of all teachers specifically responsible for providing bilingual instruction. The ESL endorsement is required of all teachers specifically responsible for providing ESL instruction. Students should contact the Office of Student Affairs for information and advising regarding teaching concentrations or special teaching endorsements.

### Independent Learning Course Work for Credit

It is the general policy of the College of Education not to accept course credit for *courses in education* taken through independent learning. Exceptions to this policy may be approved if the independent learning course work has been approved in advance of enrollment in the course by the student's advisor, respective program coordinator, and division director. In all such cases, an appropriate rationale must be submitted with the request to enroll.

### COLLEGE OF EDUCATION (COE)

See the *Graduate Catalog* for the COE courses.



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## Division of Curriculum and Instruction

Nicholas Appleton  
*Director*  
(ED 409) 480/965-1644  
tikkun.ed.asu.edu/coe/candi

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### PROFESSORS

BAKER, BARONE BITTER, CHRISTIE, EDELSKY, FAAS,  
FALTIS, FLORES, GREATHOUSE GRZYDER, GUZZETTI,  
HUDELSON, Mc SAAC PRIETO, RUTHERFORD,  
SEARFOSS, STAHL, STALEY, ZUCKER

### ASSOCIATE PROFESSORS

ANDERSON AR AS, BENAVIDES, BLUMENFELD-JONES,  
COHEN, COHN D GANGI, GOMEZ, KNAUPP McCOY,  
McGOWAN, MIDDLETON, NELSON, PIBURN, RADER,  
SURBECK, VALLEJO

### ASSISTANT PROFESSORS

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**CLINICAL ASSOCIATE PROFESSOR**  
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**CLINICAL ASSISTANT PROFESSORS**  
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### Program Areas

- Early Childhood Education
- Educational Media and Computers
- Elementary Education
- Multicultural Education
- Reading and Library Science
- Secondary Education
- Special Education

*Note:* Applications are not being accepted in Reading and Library Science

**Degrees:** B.A.E., M.A., M.Ed., Ed D., Ph.D.

### DEGREES

#### Bachelor of Arts in Education—B.A.E.

The faculty in the Division of Curriculum and Instruction offer several undergraduate academic programs designed to prepare persons to teach effectively in early childhood, elementary, secondary, and special education settings. Concentrations available at the undergraduate level include bilingual education, English as a second language (ESL), Indian education, and multicultural education. Programs in special education lead to Arizona teacher certification in the mentally handicapped, emotionally disabled, learning disabilities, and early childhood education for the handicapped areas. Programs of study leading to special endorsements by the Arizona Department of Education are bilingual educa-

tion, ESL, middle school education, reading, and school library science.

### GRADUATE PROGRAMS

The faculty in the Division of Curriculum and Instruction offer several graduate degrees in a number of majors.

For more information on courses, faculty, and programs, see the *Graduate Catalog*

### CURRICULUM AND INSTRUCTION (DCI)

**DCI 302 Principles and Applications of Effective Instruction.** (3) F, S

Principles of teaching identified by research on teaching effectiveness. Application of principles to classroom practice. Prerequisites: EDP 303 education major

**DCI 396 Field Experience I.** (0) F S

First semester PTPP Observation and limited participation in a school setting. Focus on observation of development, learning, management, instruction, assessment, and motivation. 4 hours required per week. Corequisite: semester I of the PTPP

**DCI 397 Field Experience II.** (0) F

Second semester PTPP Observation and limited participation in a school setting. Focus on observation of development, learning, management, instruction, assessment, and motivation. 6 hours required per week. Corequisite: semester I of the PTPP

**DCI 510 Teacher as Researcher.** (3) F S SS

Introduces teacher research as a new research genre. Offers teachers guidance on planning and conducting research on the r practice. Lecture, workshop

**DCI 701 Curriculum Theory and Practice.** (3) F S

Curriculum theory and practice as a field of study. Its current or emerging trends and applications, modes of inquiry, and community of scholars and practitioners. Seminar. Corequisite: master's level curriculum course.

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## Early Childhood Education Program Area

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### EARLY CHILDHOOD EDUCATION (ECD)

**ECD 300 Principles of Interprofessional Collaboration.** (3) F S  
Focuses on the dispositions, experiences, knowledge, and skills necessary for interprofessional collaboration designed for young children and their families. Prerequisite: ECD 314

**ECD 310 Educational Environments: Infants/Toddlers.** (3) F S, SS  
Organizing, planning, and implementing developmentally appropriate educational practices to provide optimal learning environments for infants and toddlers in group settings

**ECD 314 The Developing Child.** (3) F S, SS

Examines all aspects of development of children, birth through age eight with implications for teachers and parents. Classroom observation and participation required

**ECD 315 Classroom Organization and Guidance in the Early Years.** (2) F S

Develops understanding and application of classroom organization and management principles, strategies, and procedures. Prerequisite: ECD 314

**ECD 322 Communication Arts in Early Childhood Education.** (3) F  
Factors affecting language development. Setting conditions for learning listening, speaking, reading, and writing. Prerequisites: ENG 213 or equivalent, postbaccalaureate certification program admission

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**ECD 378 Practicum in Early Childhood Development.** 3) F S  
Provides a field-based experience in selected early childhood settings outside the preschool before student teaching. Prerequisite: ECD 314.

**ECD 400 Inquiry Into Teaching and Learning.** 3) F, S  
Foundational basis of the early childhood field, including historical roots, current practices, ethics, modes of teaching, and application in early childhood settings. Prerequisites: ECD 314; postbaccalaureate certification program admissions.

**ECD 401 Integrated Curriculum and Assessment: Social Studies and Creative Arts.** 3 F S  
Presents materials, techniques, and resources for a balanced program for a student and aesthetic expression appropriate for children in preschool through 3rd grade with emphasis on the integrated curriculum. Prerequisite: ECD 314. Corequisite: EMC 300.

**ECD 402 Integrated Curriculum and Assessment: Math and Science.** 3 F S  
Emphasizes developmentally appropriate educational strategies and instructional techniques in teaching mathematics and science to children in preschool through 3rd grade with an integrated curriculum approach. Prerequisites: ECD 314; MAT 114 or 117 or equivalent; MTE 180 or equivalent. Corequisite: EMC 300.

**ECD 403 Educational Environments: Preschool/Kindergarten/Primary Grades.** 3 F S  
A focus on interactions between young learners and the physical and social environment encountered in preschool, kindergarten, and primary settings. Prerequisite: ECD 314.

**ECD 404 Teaching Reading and Language Arts in Early Childhood.** 3 F S  
Development of oral and written language from birth to age 8. Describes developmentally appropriate educational strategies for promoting growth, speaking, listening, reading, and writing. Corequisites: ECD 496, EMC 300.

**ECD 405 Practicum in Teaching Reading and Language Arts in Early Childhood.** 2 F, S  
Supervised experience teaching reading and language arts at the preschool, kindergarten, and primary grade 1-3 levels. Developmentally appropriate strategies to promote young children's speaking, listening, reading, and writing abilities.

**ECD 414 Interprofessional Practicum.** (3 F S)  
Investigation of services and agencies available in the local community to parents of children with special needs. Practicum experiences with an interprofessional team format. Demonstrations, knowledge, experiences, and skills necessary for interprofessional collaboration across multiple agencies and programs.

**ECD 496 Field Experience.** (0 F S)  
Application of course content in a preschool through 3rd grade setting. Emphasis on observation, focus on child-centered curriculum, planning and delivering instruction, and assessment. Corequisite: ECD 404.

**ECD 501 Interprofessional Collaboration.** 3 F  
Dissertation knowledge, experiences, and skills necessary for interprofessional collaboration required of professionals who work with multi-needs families with young children. Prepare students to implement effective strategies and workplace plans to support interprofessional collaboration for providing integrative services to young children and their families.

**ECD 521 Primary/Elementary Communication Arts in Bilingual Education.** 3 S  
Examination of bilingual/terate development of elementary school children bringing together native and second language, oral language, and literacy development findings with educational practices. Prerequisite: BLE 511.

**ECD 522 Developmental Social Experiences in Early Childhood Education.** 3 F  
Materials, techniques, aesthetic expression, creative activities, and values in the integrated curriculum.

**ECD 525 Communication Arts in Early Childhood Education.** 3 S  
Problems and trends of current programs and oral language development. Effort to bring together language acquisition findings with educational practices. Opportunity for self-directed learning/study.

**ECD 527 Mathematics in Early Childhood Education.** 3 F  
Theory and practice in the use of manipulative materials for teaching mathematics to preschool and primary grade children. Prerequisite: ECD 402 or equivalent.

**ECD 544 Play Education.** 3 S SS  
Theories of play and the educational implications of each. Practicum applications at the early childhood level.

**ECD 555 Modern Practices in Early Childhood Education.** 3 F SS  
Trends and practices in instructional and resource materials and methods and techniques in early childhood education.

**ECD 601 Theories and Issues in Early Childhood Education.** 3) F SS  
Current theories and issues in early childhood education. Presents issues of early childhood best practices, policy, theory, research, and evaluation that are of significance to the early childhood professional. Highlights building on the child development conceptual framework as related to theory and practice.

**ECD 733 Social and Emotional Development.** 3 A  
Inquiry into the social and emotional development dynamics in children such as peer relationships, self-concept, and parenting processes, with implications for teachers.

**ECD 744 Evaluative Procedures: Young Children.** 3 S  
A critical examination and use of developmentally appropriate evaluation procedures for children from birth through age eight.

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## Educational Media and Computers Program Area

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### EDUCATIONAL MEDIA AND COMPUTERS (EMC)

**EMC 300 Computers in Education.** 1 F, S  
An introduction to word processing, databases, spreadsheets, teacher utility programs, and evaluation of educational software. Required for majors in the College of Education. Corequisites: ECD 401, 402, 404.

**EMC 321 Computer Literacy.** 3) F, S SS  
Survey of the role of computers in business and education. Laboratory experience in using word processing, database, and spreadsheet software. 2 hours lecture, 2 hours lab. *General Studies N3*.

**EMC 323 Computer Applications.** 3 F, S SS  
Introduction to computer applications such as HyperCard, Telematics, communications, Authoring Languages, and Expert Systems. Lecture/lab. *General Studies N3*.

**EMC 405 Presentation Technology for Multimedia.** 3 F, S  
An exploration of multimedia hardware and software used in creating presentations for education, corporate, and commercial applications.

**EMC 406 Computer Graphics and Animation.** 3 F, S  
The study and application of design and animation techniques for use in video or computer-based presentations.

**EMC 455 Animation and Special Effects.** (3 S)  
An examination of the art, science, and impact of animation and other special effects used in film.

**EMC 503 Current Issues and Problems in Media/Computer Education.** 3 F  
Introduction to current theory and practice in instructional media and computers. Overview of product areas.

**EMC 505 Presentation Technology for Multimedia.** 3) F, S  
An exploration of multimedia hardware and software used in creating presentations for education, corporate, and commercial applications. Lecture/lab.

**EMC 506 Computer Graphics and Animation.** 3 F, S  
The study and application of design and animation techniques for use in video or computer-based presentations. Lecture/lab.

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**EMC 507 Computers in Educational Administration.** (3) F  
Survey of computer use and applications in educational administration. Lecture, lab. Cross-listed as EDA 507. Credit is awarded only for EDA 507 or EMC 507.

**EMC 511 Computer Applications in Education.** (3) F S  
Use and evaluation of computers for word processing, information management, graphics, and authoring. Instruction in educational settings.

**EMC 513 Introduction to Multimedia.** (3) F, S  
Introduction to multimedia, emphasizing applications for business, industry, and public and higher education.

**EMC 521 Instructional Media Design.** (3) F S SS  
Solve problems using technology; specify solutions to instructional design challenges. Prerequisite: EMC 511 or instructor approval.

**EMC 522 Evaluating Computer Materials.** (3) F  
Selection, utilization, design, and evaluation of instructional computer materials. Focus on learning theory criteria for evaluating educational software.

**EMC 523 Distance Education Systems for Instruction.** (3) F  
Introduction to internet resources for educators; instructional applications of distance learning technologies.

**EMC 524 Imaging Technology.** (3) F, S SS  
Use of optical scanning and digital data manipulation of photographs for use in educational presentations and publications.

**EMC 525 Presentation Graphics.** (3) S  
Design, production, and display of computer graphics for group presentations. Prerequisite: EMC 521 or instructor approval.

**EMC 527 Instructional Television.** (3) F  
Design and production of multimedia programs for television. Lecture, lab. Prerequisite: EMC 521 or instructor approval.

**EMC 528 Photomedia Production.** (3) S  
Design and production of multimedia programs. Emphasis on slide, tape format. Prerequisites: EMC 521 and 524 and 525 or instructor approval.

**EMC 530 Development of Computer-Based Instruction.** (3) S  
The systematic design, development, and formative evaluation of computer-based instruction. Prerequisite: EMC 511 or instructor approval.

**EMC 531 Hypermedia.** (3) F S  
Explores the design, development, and production of computer-based instruction for education and industry. Lecture, lab.

**EMC 532 Desktop Publishing.** (3) F SS  
Design and production of educational materials using computer-based word processing, graphics, and page layout programs. Lecture, lab.

**EMC 535 Interactive Video.** (3) S  
The use of various authoring systems and support programs to assist in the design and production of regular and repurposed interactive video. Lecture, lab.

**EMC 584 Educational Media Internship.** (1–6) F S SS  
Prerequisites: EMC 521, LNT 502, instructor approval.

**EMC 637 Computers in Elementary School Curriculum.** (3) SS  
Experiences with educational uses of computers; computer awareness; family societal impact; classroom applications/software and curriculum development.

**EMC 701 Advanced Technologies in Education.** (3) S  
Examining the role and impact of artificial intelligence, expert systems, and related advanced technologies in education.

**EMC 702 Research in Technology-Based Education.** (3) F  
Critical exposure to theories, research, and methods in technology-based education.

**EMC 703 Research in Distance Education.** (3) S  
Seminar with emphasis on research in telecommunications and distance education. Prerequisite: EMC 523 or instructor approval.

## Elementary Education Program Area

### ELEMENTARY EDUCATION (EED)

**EED 334 Children's Literature and Elementary School Curriculum.** (3) F S  
Selecting and using children's literature in various curriculum areas in elementary school classrooms with diverse student populations. Lecture, discussion, lab. Cross-listed as RDG 334. Credit is awarded only for EED 334 or RDG 334.

**EED 420 Science Methods, Management, and Assessment in the Elementary School.** (3) F S  
Examines philosophies of science and how these relate to the implementation of management and assessment of science teaching. Lecture, discussion, lab. Prerequisites: one physical science and one biology/science course. Contact the College of Education Student Affairs Office for the approved list of courses. Corequisite: EED 480.

**EED 433 Language Arts Methods, Management, and Assessment in the Elementary School.** (3) F S  
Theory on the social nature of oral and written language and congruent teaching, management, and assessment practices. Lecture, discussion, lab. Corequisite: EED 455.

**EED 444 Organizing the Classroom Culture.** (1) F S  
Examines how teachers can create and maintain a classroom learning community within the context of an elementary school program. Discussion, workshop, lab. Prerequisites: EED 420, 433, 455, 480. Corequisite: EED 496.

**EED 455 Social Studies Methods, Management, and Assessment in the Elementary School.** (3) F S  
Teaching methods, classroom management strategies, and assessment techniques for social studies instruction in the elementary grades. Lecture, discussion, lab. Corequisite: EED 433.

**EED 478 Student Teaching in the Elementary School.** (3–15) F, S  
Supervised teaching in the area of specialization. A synthesized experience in curriculum, instruction, and classroom management. Prerequisites: 2.50 GPA, completion of professional course sequence; approval of Office of Professional Field Experiences.

**EED 480 Mathematics Methods, Management, and Assessment in the Elementary School.** (3) F S  
A beginning course in the teaching, management, and assessment of mathematics in grades K–8. Lecture, discussion, lab. Prerequisites: MTE 180 or equivalent. Corequisite: EED 420.

**EED 496 Field Experience.** (0) F S  
Application of course content in a K–8 school classroom. Emphasis on observation, pupil management, planning, and delivery of instruction, and assessment.

**EED 511 Principles of Curriculum Development.** (3) F S, SS  
Contemporary curriculum theories. Curriculum as an interrelated entity. Principles of conceiving and effecting change.

**EED 526 Communication Arts in the Elementary School.** (3) S SS  
A critical examination of school language arts teaching, focusing on theoretical assumptions regarding oral- and written-language development.

**EED 528 Social Studies in the Elementary School.** (3) F SS  
Problems and trends of current programs. Development of a balanced and articulated program for social studies.

**EED 529 Science in the Elementary School.** (3) S  
Problems and trends of current programs. Development of a balanced and articulated science program.

**EED 530 Outdoor/Environmental Education.** (3) SS  
Use of various outdoor settings as laboratories for classroom-related experience: study, observation, inquiry, research, and recreation. Includes strategies and materials for developing environmental literacy.

**EED 537 Mathematics in the Elementary School.** (3) F SS  
Contemporary mathematics teaching. Content materials and approaches to instruction.

**EED 578 Student Teaching in the Elementary School.** 9–15 F S  
Supervised teaching for postbaccalaureate students, synthesized experience in curriculum instruction and classroom management. Prerequisites: completion of 21 hours of differentiated coursework from an approved program of study, a GPA of 2.50 (postbaccalaureate degree) or 3.00 (postbaccalaureate degree) approval of the Office of Professional Field Experiences.

**EED 581 Diagnostic Practices in Mathematics.** 3 F S  
Specific skills in diagnosing/treating children's learning difficulties in mathematics. Includes practicum experiences both on and off campus in identifying strengths/weaknesses and in tailoring remediation.

**EED 720 Language in Education.** 3 A  
Sociolinguistic seminar on language issues in education including language acquisition in classroom interaction, language attitudes related to language and class/gender/ethnicity.

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## Multicultural Education Program Area

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### BILINGUAL EDUCATION (BLE)

**BLE 400 Principles of Language Minority Education.** 3 F S  
Overview of philosophical and theoretical foundations of bilingual education and ESL models of instruction. Other topics include: legal and judicial measures. Lecture, seminar, group discussion. Prerequisite: PTPP admission.

**BLE 409 Language-Sensitive Content Teaching.** 3 F S  
For preservice students seeking K–8 certification and the endorsement in bilingual education or ESL. Lecture, discussion.

**BLE 414 Reading Methods, Management, and Assessment in BLE/ESL Settings.** 3 F S  
Teaching and assessing reading with emphasis on integrated curriculum and literature-based instruction for BLE/ESL learners. Strategies for decoding (phonics), vocabulary comprehension, and content area reading. Lecture/lab, discussion. Corequisites: BLE 43, 481.

**BLE 420 Science Methods, Management, and Assessment in BLE/ESL Settings.** 3 F S  
Methods, management strategies, and assessment procedures for teaching science to BLE/ESL students in elementary schools. Lecture/lab, discussion. Corequisites: BLE 455, 480, 498.

**BLE 433 Language Arts Methods, Management, and Assessment in Elementary BLE/ESL Settings.** 3 F S  
The social nature of oral and written first and second language acquisition and congruent teaching/management/assessment practices in BLE/ESL settings. Lecture, lab, discussion. Corequisites: BLE 414, 481.

**BLE 455 Social Studies Methods, Management, and Assessment in Elementary BLE/ESL Settings.** 3 F S  
Examines methods, classroom management strategies, and assessment techniques for social studies instruction in elementary BLE/ESL classes. Lecture, lab, discussion. Corequisites: BLE 420, 480, 498.

**BLE 478 Student Teaching in the Elementary School.** 3–15 F S  
Supervised teaching in the area of specialization. A synthesized experience in curriculum instruction and classroom management in a bilingual education/ESL setting. Prerequisites: 2.50 GPA, completion of professional course sequence, approval of Office of Professional Experiences.

**BLE 480 Mathematics Methods, Management, and Assessment in Elementary BLE/ESL Settings.** 3 F, S  
Teaching/management and assessment of mathematics K–8 BLE/ESL settings. Lecture, lab, discussion. Prerequisite: MTE 18 or equivalent. Corequisites: BLE 420, 455, 498.

**BLE 481 Reading Practicum.** 3 F S  
Applications of concepts from BLE 414. Supervised school-based experiences in teaching/reading to BLE/ESL students. Corequisites: BLE 414, 433.

**BLE 496 Field Experience.** 0) F S  
Application of course content in a bilingual/ESL school setting. Emphasis on observation, pupil management, planning, and delivery of instruction and assessment.

**BLE 498 PS: Pro-Seminar.** 1 7 F S  
Small group study and research for advanced students within the majors. Major status in the department or instructor approval is required.

**BLE 511 Introduction to Language Minority Education.** 3) A  
Historical/philosophical/theoretical and pedagogical foundations of language minority education in the United States.

**BLE 514 Bilingual/Multicultural Aspects of Special Education.** 3 S  
Theories and issues related to the education of bilingual and culturally diverse exceptional children.

**BLE 515 Instructional Methods for Bilingual Students.** 3 F  
An introduction to general dual language teaching approaches and assessment strategies. Focuses on the effective teaching of limited English proficient populations. Prerequisite: BLE 511.

**BLE 520 ESL For Children.** 3 S  
Examines approaches to second language development and assessment for children, current research in second language acquisition in children. Prerequisite: BLE 511.

**BLE 521 Primary/Elementary Communication Arts in Bilingual Education.** 3 S  
Examines bilingual language development of elementary school children bringing together native and second language oral language, and literacy development findings with educational practices. Prerequisite: BLE 511.

**BLE 522 Literacy/Biliteracy Development.** 3 F  
Acquaints teachers with first and second language literacy research practice and assessment. Elementary school settings. Spanish/English emphasis. Lecture/discussion. Cross-listed as RDG 522. Credit is awarded only for BLE 522 or RDG 522. Prerequisite: BLE 511.

**BLE 524 Secondary Sheltered ESL Content Teaching.** 3 F  
Teaching and assessing ESL adolescents in the content areas with an emphasis on integrating language acquisition principles with content learning. Lecture/seminar/group work. Corequisite: BLE 541.

**BLE 528 Social Studies for Bilingual/ESL Teachers.** 3 S  
Provides a guide and instructional methods and assessment strategies relevant to bilingual/multicultural students in social studies content delivered in Spanish and English. Prerequisite: BLE 511.

**BLE 533 Literacy in Secondary BLE/ESL Settings.** 3 S  
Examines first and second language literacy research practice and assessment across content areas in secondary school settings. Lecture, discussion. Cross-listed as RDG 533. Credit is awarded only for BLE 533 or RDG 533. Prerequisite: BLE 511.

**BLE 535 Sociolinguistic Issues in Bilingual Education.** 3 F  
Survey of major theoretical issues, e.g., language situations, communicative competence, language attitudes, interlanguage, language social processes, and bilingual education. Prerequisite: BLE 511.

**BLE 541 Nature of Bilingualism/Second Language Acquisition.** 3 A  
Bilingual and second language acquisition with emphasis on children and adolescent cognitive/social and cultural aspects are stressed. Prerequisite: BLE 511.

**BLE 543 Bilingual Education Models.** 3 A  
Bilingual education programs: other studies, analysis, political, social, economic, and educational implications, practice, planning, bilingual education curriculum, issues, offerings under MCE, SED, SPE, and SPF. Prerequisite: BLE 511.

**BLE 561 Parent Involvement in Language Minority Education Programs.** 3) F S  
Examines issues, approaches, and strategies for improving parental and community involvement in the schooling of a language minority children and youth. Prerequisite: BLE 511.

**BLE 565 Literature for Hispanic Youth/Literatura para Jóvenes Hispanoparlantes.** 3 S  
Selecting, analyzing, and utilizing literature for Hispanic and Spanish speaking children and adolescents. Cross-listed as L S 565. Credit is awarded only for BLE 565 or L S 565.

**BLE 560 Practicum.** 1 6 F S  
Provides practical applications in school settings of principles of bilingual education or English as a Second Language. Special permission is required.

**INDIAN EDUCATION (IED)**

- IED 401 Navajo Language and Culture I.** 3 F  
History and culture are added component to the introduction of an language reading writing and diction of the Navajo and a general to and appreciation of the Navajo literature and culture.
- IED 403 Navajo Language and Culture II.** 3 S  
Emphasis on communication grammar and sentence structures. Translations reading writing and diction of the Navajo and a general language. Cultural activities are included. Prerequisite: IED 401.
- IED 410 History of American Indian Education.** 3 S  
Philosophical and historical evolution of the development of American education policies both traditional and contemporary society. *General Studies H*
- IED 422 Methods of Teaching Indian Students.** 3 F  
Philosophical methodological and methodological and an education. Examination of cultural differences in materials. Experimental with new teaching methods. Prerequisite: ED 41.
- IED 433 Counseling the Indian Student.** 3 A  
Techniques and methods of working with emphasis on understanding and analyzing the cultural differences. Experimental with new counseling concepts. Prerequisite: ED 41.
- IED 498 PS Navajo Language.** 3 F  
Courses designed for Navajo and non-Navajo speaking students that have little or no knowledge of the Navajo language. Prerequisite: IED 401. Emphasis on development of reading writing and speaking skills.
- IED 500 Administration and Management of Indian Education Programs.** 3 A  
Emphasis on effective leadership and participation in the schooling of American Indian students. Effective practice will be examined.
- IED 510 History of American Indian Education.** 3 F S  
Philosophical and historical review of the development of American education policies both traditional and contemporary society.
- IED 594 Workshop in Indian Education.** 6 S  
Curriculum pedagogy community involvement current issues and research will be examined.

**MULTICULTURAL EDUCATION (MCE)**

- MCE 446 Understanding the Culturally Diverse Child.** 3 A  
Survey of cultural and linguistic diversity in America. Includes educational quality of multicultural education. *General Studies C*
- MCE 447 Diversity in Families and Communities in Multicultural Settings.** 3 F S  
Diversity and teaching strategies in multicultural society. Lecture seminar activities.

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**Reading and Library  
Science Program Area**

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**LIBRARY SCIENCE (LIS)**

- LIS 410 Children's Literature.** 3 F S S  
Selecting analyzing and using modern and classic literature with young readers.
- LIS 510 Computers and Technology in the School Library.** 3 F  
Library uses of technology and computer. Fundamental concept and issues in a multimedia center. Prerequisites: LIS 511 and 581 or instructor approval.
- LIS 533 Current Library Problems.** 3 F  
Critical analysis of current practice and problems of libraries. Prerequisites: LIS 541, 561 and 571 and 511 or instructor approval.

- LIS 540 Classification and Cataloging.** 3 F  
Descriptive cataloging Dewey, etc. Classification of print and nonprint bibliography.
- LIS 561 Selection of Library Materials.** 3 F  
Principles and procedures in the selection of materials for the library.
- LIS 563 Children's Literature.** 3 F S S  
Selecting and judging children's literature and related print media to support the elementary school curriculum. Cross-listed with RDG 563. Credit awarded only for LIS 563 or RDG 563.
- LIS 565 Literature for Hispanic Youth.** 3 F S S  
Selecting analyzing and utilizing literature for Hispanic and Spanish speaking high school and adolescent students. Credit awarded only for BLE 565 or LIS 565.
- LIS 571 Basic Reference Resources.** 3 S  
Providing reference services in the library. Prerequisite: LIS 541.
- LIS 581 School Library Administration.** 3  
Administration of the school library.
- LIS 584 School Library Internship.** 16 F  
Prerequisite: LIS 541, 540, 561, 571 or instructor approval.

**READING EDUCATION (RDG)**

- RDG 301 Literacy and Instruction in the Content Areas.** 3 F S  
Required certification requirement for candidates in the content areas. Prerequisite: LIS 541.
- RDG 334 Children's Literature and Elementary School Curriculum.** 3 F S  
Selecting analyzing and utilizing literature for elementary school areas. Prerequisite: LIS 541 or RDG 334.
- RDG 414 Teaching Reading Decoding.** 3 F S  
Teaching reading decoding integrated classroom curriculum. Emphasis on the teaching of decoding phonics. Prerequisite: LIS 541 or RDG 481.
- RDG 481 Reading Practicum.** 3 F S S  
Application of concepts from RDG 414 in a classroom setting. Students demonstrate teaching skills. Prerequisite: LIS 541 or RDG 414.
- RDG 494 ST: Special Topics.** 3 F  
Special Topics in Reading Decoding.
- RDG 505 Developmental Reading.** 3 F S S  
Factors in reading development. Prerequisite: LIS 541 or RDG 414.
- RDG 507 Content Area Literacy.** 3 F S S  
Theory teaching strategies in the application of content area reading from text across subject matter.
- RDG 522 Literacy Literacy Development.** 3 F  
Acquaintance with first and second language teaching practices in the classroom. Prerequisite: LIS 541 or RDG 414.
- RDG 533 Literacy in Secondary BLE/ESL Settings.** 3 S  
Examines first and second language teaching research practice and assessment in secondary school settings. Prerequisite: LIS 541 or RDG 533. Prerequisite: LIS 541 or RDG 533.
- RDG 544 Secondary Reading Programs.** 3 S  
Examines the development of reading programs grades 7-12. Teaching strategies research and general education prerequisite: RDG 507.

**NOTE:** For the General Studies requirement and codes such as 1 N3, C and H see General Studies page 85. For graduation requirement see University Graduation Requirements page 81. For explanation of additional notation on the course offered but not listed in this catalog see Classification of Courses page 58.

**RDG 550 Practicum Experiences in Reading.** 3 F, S SS  
Practicum experience utilizing assessment and instructional techniques for classroom settings. See RDG 557 for State of Arizona reading endorsement. Prerequisite: RDG 505 or equivalent.

**RDG 556 Assessment Procedures in Reading.** 3 F S  
Techniques for classroom and clinical reading assessment and instruction. Emphasis on continuous assessment. May be taken concurrently with RDG 557. Recommended for State of Arizona reading endorsement. Prerequisite: RDG 505.

**RDG 557 Advanced Reading Practicum** 3 F, S  
Advanced practical experience utilizing specialized reading and other assessment and instructional techniques for classroom and clinical settings. Lab sections. Recommended for State of Arizona reading endorsement. May be taken concurrently with RDG 556. Prerequisites: RDG 505, instructor approval.

**RDG 563 Children's Literature.** 3 F S SS  
Selecting and using children's literature and related nonprint media to support the elementary school curriculum. Credit is awarded as L S 563. Credit is awarded only for L S 563 or RDG 563.

**RDG 581 Literature-Based Reading Programs.** 3 F S SS  
For classroom and specialized reading teachers. The role of literature in the acquisition and development of literacy. Specific suggestions for helping students learn to read and/or expand their reading ability with literature. Introduction to literature studies. Prerequisite: teaching certification.

**RDG 582 Practicum: Literature Studies.** 3 S  
Practical application of literature study group principles in field sites or through on-campus simulations. Lecture, supervised practice. Prerequisite: RDG 581 or instructor approval.

**RDG 596 Gender Culture, and Literacies.** 3 S  
Influence of gender and culture on written, oral, and pictographic texts. Seminar.

**RDG 630 Research in Reading.** 3 F  
For advanced graduate students interested in applied research problems. Literature, field reading, instruction, and major issues related to reading research. Prerequisite: instructor approval.

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## Secondary Education Program Area

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### BUSINESS EDUCATION (BUE)

**BUE 480 Teaching Business Subjects.** 3 S  
Organization and presentation of appropriate content for business subjects in the secondary school.

**BUE 501 Principles of Business Education.** 3 F  
History, philosophy, principles, and objectives of business and distributive education.

**BUE 502 Organization and Management of Cooperative Programs.** 3 F  
Work study programs for business occupations in high schools and community colleges.

**BUE 503 Competency-Based Business and Vocational Education.** 3 S  
Development and administration of competency-based individualized programs in business and vocational education.

**BUE 505 Current Literature in Business and Vocational Education.** 3 S  
Critical analyses, generalizations, and trends in business and vocational education.

**BUE 506 Information Processing for Business and Vocational Teachers.** 3 SS  
Development of curriculum and strategies for teaching information processing, hardware, software, evaluation, and equipment acquisition techniques in business and vocational education.

**BUE 512 Technology in Business and Vocational Education.** 3 SS  
Emerging curriculum and instructional technology in business and vocational education.

### SECONDARY EDUCATION (SED)

**SED 400 Principles of Effective Instruction in Secondary Education.** 3 F S SS  
Different modes of education are examined. Appropriate teaching practices for each mode are developed and applied to secondary school classrooms. Lecture, discussion. Prerequisite: PTPP admissions.

**SED 403 Principles, Curricula, and Methods** 3 F S SS  
Advanced level of development of knowledge and skills of instructional planning and methods of teaching and evaluation in the secondary school. Observation participation required. Prerequisite: SED 496.

**SED 478 Student Teaching in Secondary Schools.** 3-12) F S  
The practice of teaching. The relationship of theory and practice in teaching. Prerequisite: two complete semesters of block or equivalent.

**SED 480 Special Methods of Teaching Social Studies.** 3 F S  
Interdisciplinary approaches, production and collection of materials.

**SED 496 Field Experience.** 0 F S  
Application of course content in a secondary school setting. Emphasis on observation, pupil management, planning, and delivering instruction and assessment. Coerequisite: SED 403.

**SED 501 Introduction to Effective Instruction.** 6 F S SS  
Introductory course for postbaccalaureate certification program in secondary education. Emphasis upon developing basic classroom management, instruction, and evaluation. Includes a field assignment of at least 120 hours. Prerequisite: admission to postbaccalaureate certification program.

**SED 522 Secondary School Curriculum Development.** 3 F, S SS  
Social processes, issues, principles, patterns, and procedures in curriculum development.

**SED 533 Improving Instruction in Secondary Schools.** 3 F S SS  
Analysis of procedures, methods, techniques, and experiments in teaching in secondary schools. Prerequisites: SED 478, 578.

**SED 577 Issues and Trends in Secondary Education.** 3 N  
Analysis of day and professional reports, problems and issues. American secondary education. Prerequisites: SED 478, 578.

**SED 578 Student Teaching in the Secondary Schools.** 3-12 F S  
The practice of teaching. The relationship of theory and practice in teaching. Postbaccalaureate student only. Prerequisites: completion of approved postbaccalaureate program, a minimum 2.50 GPA, approval of the Office of Professional Field Experiences.

**SED 588 Human Relations in the Secondary Schools.** 3 A  
Problems in human relationships, the interaction of pupils, teacher administration, professional staff, and laymen. Prerequisites: SED 478, 578.

**SED 711 Secondary Curriculum Development** 3 S SS  
Theories and processes of development of curriculum evaluation for research. Prerequisites: SED 478, 522 or equivalent, 578.

**SED 722 Improvement of Instruction in the Secondary School.** 3 F  
Evaluation of the research issues and theories related to the improvement of instruction. Prerequisite: SED 533.

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## Special Education Program Area

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### SPECIAL EDUCATION (SPE)

**SPE 311 Orientation to Education of Exceptional Children.** 3 F S SS  
Includes gifted, mildly handicapped, severely handicapped, and the blind multicultural exceptionality. *General Studies SB*

**SPE 312 Mental Retardation.** 3 F S SS  
Characteristics and assessment specific to mental retardation. Term-long development education program and therapeutic procedures will be emphasized. Prerequisite: SPE 311.

**SPE 314 Introduction to Bilingual/Multicultural Special Education.** 3) F, S SS

Theoretical background and practical application of general issues regarding the education of bilingual/multicultural handicapped children. Prerequisite: SPE 311

**SPE 336 Behavioral and Emotional Problems in Children.** 3) F S SS

Characteristics and assessment specific to emotionally and behaviorally disturbed children. Term on-going development and educational programming emphasized. Prerequisite: SPE 311

**SPE 361 Introduction to Learning Disabilities.** 3) F S SS

Characteristics and assessment specific to learning disabilities. Term on-going development and educational programming emphasized. Prerequisite: SPE 311

**SPE 394 ST: Special Topics.** 3) F S

- a) Basic Special Education Curriculum
- b) Quality Practices in the Collaborative Classroom

**SPE 411 Parent Involvement and Regulatory Issues.** 3) F S

Emphasis on parent and school relations through effective communication and state and federal regulations impacting services for the handicapped. Prerequisites: SPE 311 majors only

**SPE 412 Evaluating Exceptional Children.** 3) F S

Normative and criterion-referenced diagnostic techniques, including formal evaluation. Emphasis upon application. Daily practice required. Prerequisites: DCI 396, EDP 303, EMC 300; RDG 414. SPE 311. Corequisites: SPE 413, 496

**SPE 413 Methods in Language, Reading, and Arithmetic for Exceptional Children.** (3) F S

Methods, techniques, and materials for use in prescriptive teaching. Daily practice required. Prerequisites: DCI 396, EDP 303, EMC 300, RDG 414, SPE 311. Corequisites: SPE 412, 496

**SPE 414 Methods and Strategies in Behavior Management.** (3) F S

The organization and delivery of instructional including formal evaluation and techniques. Techniques of behavior management. Daily practice required. Prerequisites: RDG 414, SPE 412, 413. Corequisites: SPE 415, 496

**SPE 415 Social Behavior Problems of Exceptional Children.** (3) F, S

Analysis and intervention into social behavior problems of exceptional populations. Daily practice required. Prerequisites: RDG 414. SPE 412, 413. Corequisites: SPE 414, 496

**SPE 455 Early Childhood and the Handicapped.** 3) F

Early childhood education as it applies to the handicapped child.

**SPE 478 Student Teaching in Special Education.** (3-15) F S

Year-long, supervised, approved special education program coordinator, completion of special education prerequisites

**SPE 494 ST: Special Topics.** 3) F S

- (a) Instruction in Content Areas: Science, Social Studies

**SPE 496 Field Experience.** 0) N

Application of course content in a special education setting. Emphasis on observation, pupil management, planning and delivering instruction, and assessment. Corequisites: SPE 411 or 413, 412, 414, 415

**SPE 498 PS: Field Experience.** 1) 3) F, S

Application of course content in a special education setting. Emphasis on observation, pupil management, planning and delivering instruction and assessment. Corequisites: SPE 411 or 413, 412, 414, 415

**SPE 511 The Exceptional Child.** 3) F S SS

Educational needs of exceptional children and adults. Not recommended for students who have completed SPE 311

**SPE 512 Individuals with Mental Retardation.** 3) F, S SS

Etiology, diagnosis, and management of individuals with mental retardation. Current trends in prevention, programming, and teacher preparation. Not recommended for students who have completed SPE 312

**SPE 514 Bilingual/Multicultural Aspects of Special Education.** (3) F S, SS

Theories and issues related to the education of bilingual and culturally diverse exceptional children.

**SPE 515 Methods for the Remediation of Learning Problems of Exceptional Children.** 3) S

Methods and materials for remedial teaching the basic academic problems of exceptional children. Prerequisites: SPE 511. A methods course in the teaching of reading and mathematics

**SPE 522 Academic Assessment of Exceptional Children.** 3) F

Normative and criterion-referenced assessment of learning problems in exceptional children. Formative evaluation included. Prerequisite: required. Lecture/practicum. Prerequisites: SPE 311, 511. Elementary methods courses, program approval

**SPE 523 Prescriptive Teaching with Exceptional Children.** 3) F

Language, reading, and arithmetic methods techniques and materials used in individualized instruction. Practicum required. Lecture/practicum. Prerequisites: elementary methods courses. SPE 311 or 511, 522. or concurrent and program approval.

**SPE 524 Effective Classroom Behavior Management.** 3) S

Organization and delivery of instructional including formal evaluation and techniques of academic behavior management for exceptional children. Practicum required. Lecture/practicum. Prerequisites: SPE 311 (or 511, 522, 523), program approval

**SPE 525 Social Behavior Interventions.** 3) S

Analysis and intervention into social behavior problems of exceptional students. Focus on strategies to change maladaptive social behavior. Practicum required. Prerequisites: SPE 311 or 511 or 522, 523. program approval

**SPE 531 Behavior Management Approaches with Exceptional Children.** (3) F SS

Behavior management approaches for classroom behavior of exceptional children. Prerequisite: SPE 511 or equivalent

**SPE 536 Characteristics of Children with Behavioral Disorders.** 3) F S, SS

Variables contributing to behavior patterns of behaviorally disordered children

**SPE 551 Teaching Young Children with Special Needs.** 3) S

Methods, materials, and curriculum for preschool and primary aged children with special needs. Prerequisites: SPE 455 and 511 or equivalent

**SPE 552 Management of Individuals with Severe Handicaps.** 3) S

Instruction and management of school-aged and adult individuals with severe physical, or multiple handicaps. Prerequisite: SPE 511 or equivalent. instructor approval

**SPE 553 Developmental/Functional Assessment.** 3) F

Teacher-focused developmental/functional assessment of preschool and severely physically and multiply handicapped individuals. Field experience required. Prerequisites: SPE 511, 512, 574 or equivalent

**SPE 554 The Parent/School Partnership.** 3) S

Includes knowledge and procedures for involvement and training of parents and caregivers of preschool and severely handicapped individuals. Field experience required. Prerequisites: SPE 455 and 511 or equivalent

**SPE 561 Characteristics/Diagnosis of Learning Disabilities.** 3) F S SS

Theories related to learning disabilities including identification and characteristics.

**SPE 562 Methods of Teaching Students with Learning Disabilities.** (3) N

Various methods and intervention strategies for remedial teaching of learning disabilities of children and youth. Prerequisite: SPE 361 or 561

**SPE 574 Educational Evaluation of Exceptional Children.** 3) F

Design and statistical considerations of normative and criterion-referenced tests. Collection, recording, and analysis of data from formal evaluation. Prerequisites: SPE 511 or equivalent, a methods course in the teaching of reading and mathematics

**SPE 575 Current Issues in the Education of Exceptional Children.** 3) F

Mastering noncategorical financing, legal, diagnostic, behavioral, and theoretical and controversial issues related to the education of exceptional children

**NOTE:** For the General Studies requirement courses and codes such as L1, N3, C, and H) see "General Studies" page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional non-business courses offered but not listed in this catalog, see "Classifications of Courses" page 58.

**SPE 577 Mainstreaming Methods.** (3) S

Successful mainstreaming methods, practical problem-solving sessions related to teacher's classroom needs, and individual contracts focusing on mainstreaming issues are addressed. General educators encouraged.

**SPE 578 Student Teaching in Special Education.** (9–15) F, S  
"Y" grade only. Prerequisites: completion of specified courses; approval by the special education program coordinator

**SPE 582 Classroom Research with Exceptional Children.** (3) SS  
Introduction to interpreting research. Specific research techniques with primary emphasis on classroom research, including applied behavior analysis.

**SPE 585 Creativity: Research and Development.** (3) S  
Nature of creativity explored in terms of philosophical underpinnings, empirical evidence, human development, self-actualization, and the ecology surrounding the creative event.

**SPE 586 Advising the Gifted Child.** (3) A  
Focus on educational planning and guidance, social and emotional development, and family problem solving regarding needs of gifted children.

**SPE 587 Controversies in Educating the Gifted.** (3) F  
In-depth analysis of major controversies in educating the gifted, including nature/nurture, the role of mental tests, and sex differences.

**SPE 588 The Gifted Child.** (3) F, SS  
Gifted children's characteristics, identification, needs, school and home environments, definitions, and misunderstandings. Research by Pressey, Stanley, Terman, and others.

**SPE 589 Methods in Teaching the Gifted.** (3) S, SS  
Methods in teaching elementary and secondary school gifted children, including individualized and computer-assisted instruction, team teaching. Prerequisite: SPE 588.

**SPE 774 Characteristics and Causation of Exceptionality.** (3) F  
In-depth analysis of literature pertaining to causes of exceptionality and learning, educational, personal-social, and cognitive characteristics. Lecture, discussion.

**SPE 775 Evaluation and Intervention in Special Education.** (3) S  
In-depth analysis of research and literature on evaluation procedures and intervention approaches for exceptional individuals at all age levels. Lecture, discussion.

**SPE 781 Research and Evaluation in Special Education.** (3) S  
Issues and problems in conducting research and/or evaluation programs involving exceptional children.

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## Division of Educational Leadership and Policy Studies

Thomas H. Metos  
*Director*  
(EDB 108) 480/965-6248  
tikkun.ed.asu.edu/elps

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**REGENTS' PROFESSOR**  
BERLINER

**PROFESSORS**  
APPLETON, FENSKE, GLASS, METOS, NORTON,  
RENDÓN, RICHARDSON, SIMMONS, SMITH, STOUT,  
VALVERDE, WEBB

**ASSOCIATE PROFESSORS**  
CASANOVA, HARTWELL-HUNNICUTT,  
LEVAN, WILKINSON

**ASSISTANT PROFESSORS**  
MARGOLIS, PEÑA

**CLINICAL PROFESSOR**  
DYER

**CLINICAL ASSOCIATE PROFESSOR**  
MACEY

### Program Areas

Education Policy Studies  
Educational Administration and Supervision  
Higher and Postsecondary Education

Degrees: M.A., M.Ed., Ed.D., Ph.D.



Students bask on the steps of the light well, above Hayden Library's entrance.

Tire Trumble photo



**GRADUATE PROGRAMS**

The faculty in the Division of Educational Leadership and Policy Studies offer several graduate degrees in a number of majors.

For more information on courses, faculty, and programs, contact the division office or see the *Graduate Catalog*

**EDUCATIONAL ADMINISTRATION AND SUPERVISION (EDA)**

See the *Graduate Catalog* for the EDA courses.

**HIGHER AND POSTSECONDARY EDUCATION (HED)**

See the *Graduate Catalog* for the HED courses.

**EDUCATIONAL POLICY STUDIES (SPF)**

**SPF 111 Exploration of Education.** 3 F S  
Education as an instrument in the development of the individual and society and its significance as an American institution.

**SPF 301 Culture and Schooling.** 3 F, S  
For the professional teacher preparation program: an overview of the cultural, social and political dimensions in which formal schooling takes place in the United States. Prerequisite: education majors only. *General Studies L2*

**SPF 401 Theory and Practice in Education.** (1-2) F S  
For the professional teacher preparation program: The analysis and interpretation of classroom behavior from perspectives derived from philosophy, social science and law. Prerequisite: education major

**SPF 501 Culture and Schooling.** 3 F S  
Introduction to social science concepts of culture and the culture in which schooling takes place in the United States. Lecture/recitation

**SPF 510 Introduction to Organization and Administration of American Public Schools.** 3 F S  
Organizational structure and administration of public education are explored through the application of legal and ethical concepts and relevant information of the social sciences. Cross-listed as EDA 510. Credit satisfied only for EDA 510 or SPF 510.

**SPF 511 School and Society.** 3 F S SS  
Interrelationship of school and society and the role of education in social change

**SPF 520 Cultural Diversity in Education.** 3 S  
Philosophical and sociological investigation of cultural diversity in the United States and how it relates to education

**SPF 533 Comparative Education in the Western World.** (3) N  
Educational practices and traditions in the leading nations of Europe and the Soviet Union

**SPF 544 Philosophical Foundations of Education.** 3 F  
Theories of education in ancient, medieval and modern classical and contemporary philosophies

**SPF 566 History of Education.** 3 S  
Development of educational institutions and ideas in the Western World from ancient times to the 20th century

**SPF 612 Evaluation Theory.** 3 F  
Explores the major theories of evaluation inquiry leading to value judgments in educational policy through examination of cases.

**SPF 622 Organizational Theory.** 3 S  
Major views of organizations and their influence on role definition and participant behaviors in educational organization. Seminar, discussions on. Cross-listed as HED 688. Credit satisfied only for HED 688 or SPF 622

**SPF 711 Social and Historical Foundations of Education.** (3) N  
Problems of American education and their socio-historical context

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**Division of Psychology in Education**

**Raymond Kulhavy**

*Director*

(EDB 301) 480/965-3384

[www.asu.edu/admissions/ahfpsyedu.html](http://www.asu.edu/admissions/ahfpsyedu.html)

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**REGENTS' PROFESSORS**

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**PROFESSORS**

BARONA, BERNSTEIN BLANCHARD CLAIBORN, FREEMAN GLASS, HACKETT, HARRIS HORAN B KERR, N. KERR, KLEIN, KRUS, KURPUS, McWHIRTER, NELSEN, SMITH, STROM SULLIVAN, ZIMILES

**ASSOCIATE PROFESSORS**

ARCINIEGA, BEHRENS BETZ BROWN, COHN, HOOD, KINNIER, MOORE SANTOS DE BARONA, SAVENYE SHELL

**ASSISTANT PROFESSORS**

FISHER MATTHEWS, NAKAGAWA OTA WANG, ROBERTS STAFFORD THOMPSON

**CLINICAL ASSOCIATE PROFESSOR**

HOMER

**CLINICAL ASSISTANT PROFESSOR**

STAMM

**Program Areas**

Counseling Psychology  
Counselor Education  
Learning and Instructional Technology  
Lifespan Development Psychology  
Measurement, Statistics, and Methodological Studies  
School Psychology

**Degrees** M.A., M.C., M.Ed., Ed.D., Ph.D.

**GRADUATE PROGRAMS**

The faculty in the Division of Psychology in Education offer graduate degrees in a number of majors.

For more information on courses, faculty, and programs, contact the division office or see the *Graduate Catalog*.

**COUNSELOR EDUCATION (CED)**

See the *Graduate Catalog* for the CED courses.

**COUNSELING PSYCHOLOGY (CPY)**

See the *Graduate Catalog* for the CPY courses

**EDUCATIONAL PSYCHOLOGY (EDP)**

**EDP 301 Learning and Motivation in Education.** (2) F S  
Using a case format learning and motivation principles are applied to education contexts. Prerequisite: education major

**EDP 302 Assessment and Evaluation in Education.** (1) F S  
Using a case format assessment and evaluation principles are applied to education contexts. Prerequisite: education major.

**EDP 303 Human Development.** 3 F S

Selected aspects of child and adolescent development. Emphasis on possible influences by teachers and parents. Prerequisites: CDE 232 or equivalent education major. *General Studies: L2*

**EDP 310 Educational Psychology.** 1 6 F, S SS

Human behavior in educational situations presented through instructional modules. Students may re-enroll for credit a total of 6 hours. *General Studies: SB*

**EDP 313 Childhood and Adolescence.** 3 F, S, SS

Principles underlying total development of pre-adolescent children. Emphasis on physical, intellectual, social and emotional development with practical implications for teachers grades 5-9. Prerequisite: EDP 303 or admission to College of Education pre-baccalaureate program.

**EDP 454 Statistical Data Analysis in Education.** 3 F S SS

The role of data analysis in research and decision making. Elements of exploratory data analysis, descriptive indexes and statistical inference. Lecture/lab. Prerequisite: MAT 117. *General Studies: N2*

**EDP 502 Introduction to Quantitative Methods.** 3 F S SS

Topics in statistics, measurement and research design. Exploratory data analysis, estimation theory and statistical inference. Use of computers for data analysis. Cross-listed as COE 502. Credit is awarded only for COE 502 or EDP 502.

**EDP 503 Introduction to Qualitative Research.** 3 F S SS

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

**EDP 504 Learning and Instruction.** 3 F, S SS

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

**EDP 510 Essentials of Classroom Learning.** 3 F S SS

Theoretical and empirical foundations of learning in the classroom. Critical exposure to research and method in current psychology. Cross-listed as LNT 51. Credit is awarded only for EDP 510 or LNT 510.

**EDP 513 Child Development.** 3 F, S SS

Examination of problems and achievements experienced by children growing up in a technological society. Emphasis on discovering the child's perspective.

**EDP 514 Psychology of the Adolescent.** 3 F S SS

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

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

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

**EDP 534 Principles of Behavior Modification.** 3 F

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

**EDP 535 Applied Behavior Analysis.** 3 F

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

**EDP 536 Physiology of Behavioral Disorders.** 3 F

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

**EDP 540 Theoretical Views of Learning.** 3 F, S

Classical and cognitive theories of learning plus recent orientational, illustrative experimental and ratonal foundations. Implications for educational practice. Cross-listed as LNT 540. Credit is awarded only for EDP 540 or LNT 540.

**EDP 542 The Psychology of Learning and Instruction.** 3 S

Critical review and evaluation of research on learning variables relevant to acquisition and retention of instructional materials. Lab. Cross-listed as LNT 542. Credit is awarded only for EDP 542 or LNT 542.

**EDP 544 Psychology of Reading.** 3 F

Alternative analyses of the reading process, designs and procedures for investigation. Instructional and non-instructional variables related to reading achievement.

**EDP 550 Introduction to Measurement in Education.** 3) F S

Nature and types of educational measures. Critiquing and selecting appropriate measuring devices. Constructing measuring devices. Social controversies about tests. Lecture/lab. Prerequisite: EDP 502 or instructor approval.

**EDP 552 Quantitative Data Analysis in Education I.** 3) F S, SS

Continued treatment of statistical estimation, testing, and research synthesis. Inferential techniques including ANOVA and multiple regression with computers. Lecture/lab. Prerequisite: EDP 502 or instructor approval.

**EDP 554 Quantitative Data Analysis in Education II.** 3) F, S, SS

Advanced issues in applied multiple regression and ANOVA. Introduction to ANCOVA. Use of computers for data analysis. Lecture/lab. Prerequisite: EDP 552 or instructor approval.

**EDP 556 Data Processing Techniques in Measurement and Research.** 3 A

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

**EDP 560 Individual Intellectual Assessment.** 3 F, S

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

**EDP 561 Lab in Psychological Assessment.** 3) S

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

**EDP 562 School Psychology: Theory and Practice.** (3 F

Development and present status of school psychology including an overview of assessment and intervention strategies and professional issues.

**EDP 563 Interventions in School Psychology.** 3 F

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

**EDP 564 Curriculum-Based Assessment and Academic Interventions.** 3 S

Construction of administration and scoring outcome-based measures. Use of measures for using the various educational decisions.

**EDP 566 Diagnosis of Learning Difficulties.** 3) S

Critical diagnosis of learning difficulties emphasizing specific academic problems. Use and interpretation of diagnostic instruments in practical school situations. Prerequisites: EDP 560 and 562 or equivalent. Instructor approval.

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

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

**EDP 568 Diagnosis and Interventions for Children and Adolescents with Emotional Handicaps.** 3 F

Critical diagnosis of emotional handicaps in children and adolescents with emphasis on interpretation of diagnostic instruments and designing appropriate interventions in school settings. Lecture/lab. Prerequisites: EDP 566, PSY 578 or equivalent.

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

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

**EDP 652 Multivariate Procedures in Data Analysis I.** 3 F

Introduction to matrix algebra. Application of MANOVA, MANCOVA, power analysis, effect size, discriminant and repeated measures analysis with computers. Lecture/lab. Prerequisite: EDP 554 or instructor approval.

**EDP 654 Multivariate Procedures in Data Analysis II.** 3 S

Treatment of applied multivariate multiple regression, canonical correlation, factor analysis, log-linear models and structural equation models with computers. Lecture/lab. Prerequisite: EDP 652 or instructor approval.

**LEARNING AND INSTRUCTIONAL TECHNOLOGY (LNT)**

See the *Graduate Catalog* for the LNT courses.

# College of Engineering and Applied Sciences

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Peter E. Crouch, Ph.D.  
Dean



Interior of the Noble Science and Engineering Library

John MacIsaac photo

<b>Del E. Webb School of Construction . . . . .</b>	<b>202</b>	<b>Department of Electrical Engineering . . . . .</b>	<b>235</b>
<b>School of Engineering . . . . .</b>	<b>206</b>	<b>Department of Industrial and Management Systems Engineering . . . . .</b>	<b>240</b>
<b>Department of Chemical, Bio, and Materials Engineering . . . . .</b>	<b>210</b>	<b>Department of Mechanical and Aerospace Engineering . . . . .</b>	<b>244</b>
<b>Department of Civil and Environmental Engineering . . . . .</b>	<b>223</b>	<b>Programs in Engineering Special Studies . . . . .</b>	<b>252</b>
<b>Department of Computer Science and Engineering . . . . .</b>	<b>229</b>		

## PURPOSE

The purpose of the College of Engineering and Applied Sciences is to provide students with a range of educational opportunities by which they may achieve competence in the major branches of engineering, in computer science, and construction. Considerable effort is spent on the development and delivery of well rounded programs that enhance student preparation for professional careers, lifelong learning, and responsible participation as a member of society.

For more information, visit the college's Web site at [www.eas.asu.edu](http://www.eas.asu.edu).

## ORGANIZATION

The College of Engineering and Applied Sciences is composed of the following academic and service units (with six departments making up the School of Engineering):

Del E. Webb School of Construction

### School of Engineering

Department of Chemical, Bio, and Materials Engineering

Department of Civil and Environmental Engineering

Department of Computer Science and Engineering

Department of Electrical Engineering

Department of Industrial and Management Systems Engineering

Department of Mechanical and Aerospace Engineering

**Research Centers.** The college is committed to the development of research programs of national prominence and to the concept that research is an important part of its educational role. The college encourages the participation of both qualified undergraduate students and graduate students in various research activities. Most of the faculty are involved in government or industry-sponsored research programs in a wide variety of topics. A partial list of these topics includes aerodynamics, biotechnology, computer design, computer integrated manufacturing, environmental fluid dynamics, innovative engineering education, microelectronics manufacturing, power systems, semiconductor materials and devices, signal processing, solar energy, solid-state electronic devices, structural dynamics, telecommunications, thermo sciences, and transportation systems. This research is carried out in the departments and schools listed above and in the following interdisciplinary research centers:

Center for Innovation in Engineering Education

Center for Low Power Electronics

Center for Research in Engineering and Applied Sciences

Center for Solid State Electronics Research

Manufacturing Institute

Center for System Science and Engineering Research

Telecommunications Research Center

**Center for Professional Development.** The Center for Professional Development, often in cooperation with the college's academic units and research centers, provides a variety of technical conferences, seminars, short courses, and televised and satellite-transmitted programs to enable engineers, scientists, and managers to continue the lifelong learning that is so necessary in a constantly changing world.

Programs may be conducted on campus, at various off campus locations, or at company sites upon request. For more information, contact the Center for Professional Development, located in ECG 148, at 480/965-1740, by

e mail at [asu.cpd@asu.edu](mailto:asu.cpd@asu.edu), or visit the center's Web site at [www.eas.asu.edu/cpd](http://www.eas.asu.edu/cpd)

## ADMISSION

Individuals wishing to be admitted to freshman standing in the College of Engineering and Applied Sciences should have completed certain secondary school units. These units are identified in the requirements for each of the two schools in the college. If these conditions are not met, additional university course work, possibly unacceptable for degree credit, may be required.

Students who are not admissible to programs in this college and who enroll in another college at ASU may not register for any 300 or 400 level courses in this college unless they are required in their degree programs and the students have the proper course prerequisites.

Entrance requirements of this college may differ from those of other ASU academic units. Students may be admitted under one of two different classifications, professional or preprofessional.

**Professional Status.** For admission to professional status, Arizona residents and nonresidents must meet one of the requirements as listed in the appropriate section of the "Professional Status Requirements for Residents" table, page 197. In addition, an international student must satisfy minimum Test of English as a Foreign Language (TOEFL) score requirements as shown in the table.

Students admitted to the university after successful completion of the General Education Development (GED) examination are admitted as preprofessional students within their major. Professional status is attained by meeting the minimum ACT or SAT score required for admission as listed in the "Professional Status Requirements" table, page 197.

**Preprofessional Status.** A student not admissible to professional status within the college but otherwise regularly admissible to ASU as stated in "Undergraduate Admissions," page 40, may be admitted as a *preprofessional student* to any one of the academic programs of the college. International students whose TOEFL scores do not meet the required minimum shown in the tables below may also be admitted to preprofessional status. A student admitted into this classification follows the freshman sophomore sequence of courses as required by the chosen major. Courses are selected with the assistance of an academic advisor. After completing a minimum of 30 semester hours of required or approved elective courses with a cumulative GPA equivalent to that required of transfer students and corresponding to the chosen major, students may apply for admission to professional status. *International students must also submit a TOEFL score equivalent to that required for admission to professional status* (see the "Professional Status Requirements" table, page 197). Preprofessional students are not permitted to register for 300 and 400 level courses in the College of Engineering and Applied Sciences until their status is changed to the professional classification.

**Readmission.** Students applying for readmission to professional status for any program in this college must have a cumulative GPA for a 1 college course work equal to that of

## Professional Status Requirements

School	High School Rank	Minimum Scores			Transfer GPA <sup>1</sup>	
		ACT	SAT	TOEFL <sup>2</sup>	Resident	Nonresident
<b>Residents</b>						
Construction	Upper 25%	23	1140			
Engineering	Upper 25%	23	1140			
<b>Nonresidents and International Students</b>						
Construction	Upper 25%	24	1140	550		
Engineering	Upper 25%	24	1140	550		
<b>Transfer Students</b>						
Construction				550	2.25	2.50
Engineering				550	2.50	2.50

<sup>1</sup> The cumulative GPA is calculated using all credits from ASU as well as those from other colleges and universities

<sup>2</sup> This test is for international students see "TOEFL," page 19 .

the transfer admission requirements shown in the appropriate section of the "Professional Status Requirements" table.

**Transfer into and Within the College.** Students transferring between academic programs within the college or from other colleges within the university must meet both the cumulative GPA requirement and the catalog requirements of the desired program in effect at the time of transfer. Students who are transferring from an Arizona community college and have been in continuous residence may continue under the catalog in effect at the time of their entrance into the community college.

**Transfer Students.** A student who contemplates transferring into this college from another institution, whether a community college or four year institution, should carefully study the catalog material pertaining to the particular program and consult an advisor in this college before enrolling in the other institution. These steps assure a smooth transition at the time of transfer. Transfer students may request admission to either preprofessional or professional status in any of the programs offered by this college.

The minimum requirements for admission of resident, nonresident, and international transfer students to the professional program are listed in the table, "Professional Status Requirements for Transfer Students." The academic units may impose additional admission and graduation requirements beyond the minimum specified by the college.

Credit is granted for transferred courses deemed equivalent to corresponding courses in the selected program of study, subject to grade and ASU resident credit requirements. No grades lower than "C" are accepted as transfer credit to meet the graduation requirements of this college. Credits transferred from a community college or two-year institution are applied only as lower-division credits. For a listing of the acceptable courses transferable to the various college degree programs, prospective Arizona community college transfer students should consult their advisors and refer to the ASU transfer guides available on the Web at [www.asu.edu/provost/articulation](http://www.asu.edu/provost/articulation)

It should be noted that some courses taken in other colleges of this university or other universities may be acceptable for general university credit but may not be acceptable toward the degree requirements of this college.

Determination of those particular courses acceptable to a specific degree program is made within the appropriate academic unit with the approval of the dean.

**Cooperative Education.** The co-op program is a work study plan of education that alternates periods of academic study with periods of employment in business, industry, or government. Students who choose this program ideally complete 12 months of employment and graduate with both the academic background and practical experience gained from working with professionals in a chosen field.

A student in the college is eligible to apply to the co-op program upon completion of 45 or more hours of classes required for the selected major. Transfer students are required to complete at least one semester at ASU before beginning work. All student applicants must have a GPA of at least 2.50 and the approval of an advisor.

To maintain continuous student status in the university, each co-op student must be enrolled in ASE 399 Cooperative Work Experience for one semester hour during each work session. Such credit cannot be applied toward degree requirements. For more information, contact the director of Student Academic Services at 480/965-1750 (ECG 102) or the Career Services office at 480/965-2350 (SSV C359)

## ADVISING

For assistance and counseling in planning a program of study, each student in this college is assigned a faculty advisor who is familiar with the chosen field of specialization and who must be consulted before registering each semester. The student should inform the advisor of any outside work or activity so that course loads may be adjusted accordingly.

Most students attending college find it necessary to obtain part-time employment; consequently, it is suggested that a careful balance of work and class requirements be considered in order to avoid academic problems.

Students enrolled in this college may register for a maximum of 19 semester hours each semester. Any student wanting to register for more than the maximum must petition the CEAS Standards Committee and must have an approval on file before registering for the overload.

College of Engineering and Applied Sciences Baccalaureate Degrees and Majors

Major	Degree	Administered by
<b>Del E. Webb School of Construction</b>		
Construction Options: general building construction, heavy construction, residential construction, specialty construction	B.S.	Del E. Webb School of Construction
<b>School of Engineering</b>		
Aerospace Engineering Emphases: aerodynamics, aerospace materials, aerospace structures, computer methods, design, mechanics, fluid, system dynamics and control	B.S.E.	Department of Mechanical and Aerospace Engineering
Bioengineering Emphases: Biomedical engineering, biomedical engineering materials, engineering, bio-mechanical engineering, biomedical imaging, engineering systems engineering, molecular and cellular engineering, premedical engineering	B.S.E.	Department of Chemical, Bio, and Materials Engineering
Chemical Engineering Emphases: biochemical, biomedical, environmental, materials, premedical, process engineering, semiconductor processing	B.S.E.	Department of Chemical, Bio, and Materials Engineering
Civil Engineering Options: environmental engineering	B.S.E.	Department of Civil and Environmental Engineering
Computer Science	B.S.	Department of Computer Science and Engineering
Computer Systems Engineering	B.S.E.	Department of Computer Science Engineering
Electrical Engineering	B.S.E.	Department of Electrical Engineering
Engineering Interdisciplinary Studies	B.S.	School of Engineering
Engineering Specialized Options: premedical computing	B.S.E.	School of Engineering
Industrial Engineering	B.S.E.	Department of Industrial and Management Systems Engineering
Materials Science and Engineering Emphases: structural, ceramic materials, energy systems, integrated circuit materials, manufacturing and material processing, mechanical metallurgy, metallic materials systems, polymers and composites	B.S.E.	Department of Chemical, Bio, and Materials Engineering
Mechanical Engineering Emphases: aerodynamic, biomedical, computer methods, control and dynamic systems; design, energy systems, fluid mechanics, manufacturing stress analysis, failure prevention and materials thermodynamics	B.S.E.	Department of Mechanical and Aerospace Engineering

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 Application forms are being accepted at this time.

**DEGREES**

The faculty of the College of Engineering and Applied Sciences offer programs leading to the B.S. and B.S.E. degrees with a list of subjects shown in the "College of Engineering and Applied Sciences Baccalaureate Degrees and Majors" table. Each major is administered by the academic unit involved.

**Integrated B.S.E.-M.S. Program.** To provide greater program flexibility qualified student of the School of Engineering may undertake a program with an integrated fourth and fifth year undergraduate study in one of several fields of specialization in engineering. This program provides an

opportunity to meet the increasing demands of the profession for graduates who can begin their engineering careers at an advanced level.

Students admitted to this program are assigned a faculty committee that supervises a program of study in which there is a progression in the course work and in which earlier work is given application in the later engineering courses for both the bachelor's and master's degrees. Entry into the integrated program requires an application submitted to the dean through the faculty advisor and the department chair. Applications are reviewed by a school committee that recommends the appropriate action to the dean. The application may be submitted in the fifth semester.

## GRADUATE PROGRAMS

The faculty in the College of Engineering and Applied Sciences offer a Master of Computer Science (M.C.S.) degree; a Master of Science (M.S.) degree with majors in Computer Science, Construction, and Engineering Science; a Master of Science in Engineering (M.S.E.) degree; and a Ph.D. degree in Engineering or Computer Science. The faculty in the Department of Industrial and Management Engineering also participate with the American Graduate School of International Management (Thunderbird) to offer the Master of Science in Engineering (Industrial Engineering) Master of International Management of Technology. For more information, see the "College of Engineering and Applied Sciences Graduate Degrees and Majors" table, page 200.

School of Engineering faculty participate in offering the Master of Engineering (M.E.) as a collaborative degree program offered by Arizona's three state universities.

For more information on courses, faculty, and programs, see the *Graduate Catalog*.

## DEGREE REQUIREMENTS

For detailed information on the degree requirements of a major in the College of Engineering and Applied Sciences, refer to that department's or school's individual description on the following pages.

## UNIVERSITY GRADUATION REQUIREMENTS

In addition to department and school requirements, students must meet all university graduation requirements (see "University Graduation Requirements," page 81). A well planned program of study enables students to meet all requirements in a timely fashion. Students are encouraged to consult with an academic advisor in planning a program to ensure that they comply with all necessary requirements.

### General Studies Requirement

All students enrolled in a baccalaureate degree program must satisfy a university requirement of a minimum of 35 hours of approved course work in General Studies. General Studies courses are listed below the "General Studies Courses" table, page 89 in the *General Catalog*, in the course descriptions, in the *Schedule of Classes*, and in the *Summer Sessions Bulletin*. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

### First-Year Composition Requirement

As a minimum, completion of ENG 101 and 102, or ENG 107 and 108, or ENG 105 with grades of "C" or higher is required for graduation from ASU in any baccalaureate program. See "First Year Composition Requirement" on page 81. Any student whose written or spoken English in any course is unsatisfactory may be required by the appropriate director or department chair to take additional course work.

## COLLEGE DEGREE REQUIREMENTS

### Pass/Fail Grades

Students enrolled in the College of Engineering and Applied Sciences do not receive degree credit for pass/fail courses taken at this institution. In addition, no course in this college is offered for pass/fail credit. Students request

ing credit for pass/fail courses taken at another institution must file a Petition for Adjustment to Curriculum Requirements. Each request is judged on its particular merits.

### Entry into Upper-Division Courses

Before enrolling in courses at the 300 level and above, students must be in good academic standing in professional program status and have the approval of their advisors. A student who is not in good academic standing must secure approval from his or her advisor and the college's Student Academic Services. Students whose grades in 300 level courses are unsatisfactory may be required to retake one or more courses for which credit has previously been granted.

The departments and schools have certain additional requirements that must be met in addition to the above college requirements and students should consult them for details.

### Currency of Course Work

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

## MAJOR REQUIREMENTS

For detailed information on the degree requirements of a major in the College of Engineering and Applied Sciences, refer to that department's or school's individual description on the following pages.

## ACADEMIC STANDARDS

**Retention.** A student is expected to make satisfactory progress toward completion of degree requirements in order to continue enrollment in the College of Engineering and Applied Sciences. Any one of the following conditions is considered unsatisfactory progress and results in the student 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.

Students on probation are subject to disqualification if (1) they do not attain a semester GPA of 2.25; (2) their cumulative GPA is below 2.0 at the end of the probationary semester; or (3) they are placed on probation for two consecutive semesters.

Courses completed during the summer sessions may not be used to reevaluate a student's fall semester probationary status.

Students on academic probation are not allowed to register for more than 13 semester hours of course work. Probationary students may not register for the next semester without a special permit from an advisor in Student Academic Services. Special permits are not given until grades are recorded by the registrar for the current semester.

**Disqualification.** During a semester on academic probation, a student who fails to meet the retention standards specified above is disqualified. Students may request a review of their disqualification status by contacting the associate director of Student Academic Services in ECG 102. Any disqualified

## College of Engineering and Applied Sciences Graduate Degrees and Majors

Major	Degree	Administered by
<b>Del E. Webb School of Construction</b>		
Construction Concentrations: construction science, facilities, management	M.S.	Del E. Webb School of Construction
<b>School of Engineering</b>		
Aerospace Engineering	M.S., M.S.E., Ph.D.	Department of Mechanical and Aerospace Engineering
Bioengineering	M.S., Ph.D.	Department of Chemical, Bio, and Materials Engineering
Chemical Engineering Concentrations: biomedical and clinical engineering, chemical process engineering, chemical reactor engineering, energy and materials conversion, environmental control, solid-state processing, transport phenomena	M.S., M.S.E., Ph.D.	Department of Chemical, Bio, and Materials Engineering
Civil Engineering	M.S., M.S.E., Ph.D.	Department of Civil and Environmental Engineering
Computer Science	M.C.S., M.S., Ph.D.	Department of Computer Science and Engineering
Electrical Engineering	M.S., M.S.E., Ph.D.	Department of Electrical Engineering
Engineering Science	M.E.	School of Engineering
Industrial Engineering	M.S., M.S.E., Ph.D.	School of Engineering
Mechanical Engineering	M.S., M.S.E., Ph.D.	Department of Industrial and Management Systems Engineering
Science and Engineering of Materials Concentrations: high resolution nanostructure analysis, solid state device materials design	Ph.D. <sup>2</sup>	Department of Mechanical and Aerospace Engineering Committee on the Science and Engineering of Materials

<sup>1</sup> This collaborative program is offered by the three state universities. Refer to the 1999-2000 *Graduate Catalog* for more information.

<sup>2</sup> This program is administered by the Graduate College. See "Graduate College," page 301.

student who is accepted by another college at ASU may not register for courses in this college unless the courses are required for the new major. Disqualified students who do register for courses in this college may be withdrawn from these courses any time during that semester. Furthermore, students at the university who have been disqualified academically by this college are not eligible to enroll in summer session courses in this college until the disqualification period has expired and they have been reinstated.

**Reinstatement.** The College of Engineering and Applied Sciences does not accept an application for reinstatement until the disqualified student has remained out of this college for at least a 12-month period. Merely having remained in a 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 at least 15 semester hours of pertinent courses in the discipline at a community college with higher than average grades, and a cumulative GPA of 2.50 or higher for all courses completed.

### 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 the student's consent at any time before the final examination. Such withdrawal may be initiated by the instructor, the chair of the department offering the course, the director of Student Academic Services, or the dean of the college. In such cases, students will not receive monetary reimbursement. However, such withdrawal is considered to be unrestricted as described under "Grading System," page 73, and does not count against the number of restricted withdrawals allowed.

### SPECIAL PROGRAMS

**Foundation Coalition.** ASU is a member of the Foundation Coalition, a National Science Foundation funded group of seven institutions of higher learning across the U.S. that is working to improve engineering education. Foundation Coalition programs are intended to

1. demonstrate and promote the interrelationships of subject matter within the curriculum,
2. improve the interpersonal skills of students and the understanding of concepts through the use of concepts through the use of more teaming and cooperative learning environments,
3. increase the use of technology in the curriculum; and
4. assess and evaluate intended improvements.