College of Liberal Arts and Sciences

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PURPOSE

Like all major research universities, Arizona State University provides the means for undergraduates to acquire a liberal education, an education that broadens students’ understanding in the major areas of human knowledge while providing students with in-depth knowledge in their chosen areas of focus. While the professional schools and colleges can and do provide for important dimensions of a liberal education, the central academic setting for accomplishing this basic university purpose is the College of Liberal Arts and Sciences (CLAS). The college provides a particularly rich and varied set of opportunities for students to gain the kind of liberal education that helps to prepare them for a lifetime of continued learning and application of knowledge in a diverse and ever-changing world.

As a consequence of the wide range of subjects CLAS offers in the humanities, the natural sciences and mathematics, and the social and behavioral sciences, instruction is provided in a number of core areas for undergraduate students from all of the other colleges. Students with majors in business, education, engineering, nursing, and other professional colleges rely on CLAS for basic foundation courses. CLAS also offers the majority of courses meeting the General Studies requirement.

CLAS initiated and continues to participate actively with the Barrett Honors College. It also offers advising to undergraduates who are working out their undergraduate programs or are planning for graduate studies.

Most of the university faculty’s engagement in the discovery and creation of knowledge and its dissemination occurs in CLAS. As an integral part of this activity, CLAS offers a wide range of graduate training programs leading to a master’s or doctoral degree. For graduate degree application information, see the Graduate Catalog and contact either the Division of Graduate Studies or the academic unit educational programs.
in which the degree of interest would be earned, the latter in order to receive detailed information on particular degree requirements.

ORGANIZATION

CLAS consists of the School of Global Studies, the Hugh Downs School of Human Communication, the School of Human Evolution and Social Change, the School of Justice and Social Inquiry, the School of Life Sciences, 20 academic departments, several interdisciplinary programs, 10 centers, and several research institutes and laboratories. The college offers 40 programs leading to a bachelor’s degree, 31 programs leading to a master’s degree, 22 programs leading to a doctoral degree, and interdisciplinary graduate programs in cooperation with other colleges. Undergraduate customized interdisciplinary degrees are also available.

For more information, access the college’s Web site at clas.asu.edu.

ADMISSION

Any entering ASU student who has met the minimum university entrance requirements can be admitted to a CLAS program.

Any student who is in university good standing, who wishes to major in a subject offered by CLAS and to follow a program of study in the major may transfer into the college. Current ASU students who are changing their majors to CLAS from another ASU college are encouraged to first contact the advisor in the department they are moving to.

Transfer Students. The university standards for evaluation of transfer credit are listed under “Transfer Credit,” page 71. All students who meet the university standards are admissible to CLAS. Transfer students are urged to contact the relevant academic department or the Office of Undergraduate Programs in FOUND 110, to ensure a smooth transition to CLAS. Students who have transferred course credit from institutions other than Arizona community colleges or public universities must have their transcripts evaluated by an advisor in FOUND 110. Students who have attended only Arizona community colleges, Northern Arizona University, or the University of Arizona have evaluations performed in the department of the major.

Courses transferred from two-year colleges are accepted as lower-division credit only. Students are urged to choose their community college courses carefully, in view of the fact that a minimum of 45 semester hours of work taken at the university must be upper-division credit (see “Community Colleges,” page 72).

ADVISING

All students are urged to seek advising in the appropriate college unit before registration. Students must follow the calendar published in the Schedule of Classes each semester for information and deadlines pertaining to enrollment, adding/dropping classes, and withdrawals.

In addition to information provided by an advisor, students must read the requirements for university General Studies, college graduation, and major degree requirements in their edition of the ASU General Catalog. See “General Studies,” page 93, “University Graduation Requirements,” page 89, “College Graduation Requirements,” page 503, and the section of the department offering the major. The ASU General Catalog is the governing source for all degree requirements.

Regular Advising. All students are strongly urged to seek advising in the appropriate college unit before registration.

Advising Locations. CLAS students should seek routine advising at the locations shown in the “Advising Locations” table, on this page.

The Office of Undergraduate Programs, in FOUND 110, is the central resource center for academic information in the college. Requests from students, departmental advisors, and faculty for clarification of rules, procedures, and advising needs of the college and university should be directed to that office.

<table>
<thead>
<tr>
<th>Advising Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
</tr>
<tr>
<td>Career advising (all majors)</td>
</tr>
<tr>
<td>Declared majors in academic good standing</td>
</tr>
</tbody>
</table>

Mandatory Advising. The following categories of Liberal Arts and Sciences students must receive advising and must be cleared on the Mandatory Advising Computer System (MACS) before their classes are scheduled:

1. students in their first semester at ASU;
2. students on probation;
3. students with a cumulative GPA of less than 2.00;
4. students in their first three semesters (in selected departments);
5. other students with “special admissions” status; and
6. students who have been disqualified (these students are allowed to attend ASU summer and winter sessions only and must be advised in the Office of Undergraduate Programs in FOUND 110).

Students in the above mandatory advising categories should consult an advisor in the appropriate advising location listed in the previous section. Students are encouraged to check their mandatory advising status each semester before attempting registration transactions.

Advising for Preprofessional Programs. Special advising is available for students planning to enter the fields listed in the “Advising for Preprofessional Programs” table, page 501. The professional programs shown in the table are not majors in themselves; that is, there are no majors called “premedical,” “prelaw,” etc. In each program, the student must select an established major in CLAS or in one of the other colleges.

Pre-Health Professions. Students pursuing admission to professional schools in the health professions must choose a major offered by ASU. However, specific courses must be taken to prepare the student to take the MCAT or other entrance examinations and to succeed in postbaccalaureate training. Therefore, students who plan to pursue a health
Internships. All students are encouraged to complete at least one internship before graduation. Many CLAS disciplines have well-established internship programs, so students should begin with their academic departments. Contact information may be found on the Web at clas.asu.edu/students/clasworks. To develop a successful internship experience, students are encouraged to meet with the director of CLASWorks for a career advising session soon after arriving on campus.

DEGREES

Majors. Programs leading to the BA and BS degrees are offered by CLAS, with majors in the subjects listed in the “College of Liberal Arts and Sciences Baccalaureate Degrees and Majors” table, page 502. Each major is administered by the academic department indicated.

Concurrent Degrees and Second Baccalaureate degrees. Students who wish to pursue a concurrent degree in CLAS may not double count courses from one major to the other. Each major must consist of a minimum of 30 semester hours unique to that major. Students who wish to obtain concurrent degrees must realize that there are certain combinations that would not be approved because there is too great an overlap between the courses required for each major. Similarly, students who earn one baccalaureate degree may not earn a second baccalaureate degree in the same major or in a major that does not contain 30 core hours unique to that major. For example, a student may not pursue a degree in two life science fields (with the exception of Clinical Laboratory Sciences).

Minors. Although not required for graduation, special college-approved minors are available in most departments. Check department program descriptions for details. Minors must have at least 18 hours of designated courses, including at least 12 hours of upper-division work. The college requires a grade of at least “C” (2.00) in all upper-division courses in the minor. Some departments have stricter requirements. A minimum of six upper-division hours in the minor must be taken in residence at the Tempe campus.

University policies prohibit the “double-counting” of courses from the major for the minor. Specific questions concerning double-counting, as well as general questions about the approval processes for minors, should be taken up with an academic advisor in the department offering the minor or the Office of Undergraduate Programs in FOUND 110.

Refer to the CLAS portion of the “ASU Minors” table, page 127.

Graduate Degrees. See the “College of Liberal Arts and Sciences Graduate Degrees and Majors” table, page 506. Refer to the Graduate Catalog for requirements.
## College of Liberal Arts and Sciences Baccalaureate Degrees and Majors

<table>
<thead>
<tr>
<th>Major</th>
<th>Degree</th>
<th>Concentration</th>
<th>Administered By</th>
</tr>
</thead>
<tbody>
<tr>
<td>African and African American Studies</td>
<td>BA</td>
<td>Humanities/arts; politics and society; or social and behavioral sciences</td>
<td>African and African American Studies Program</td>
</tr>
<tr>
<td>American Indian Studies</td>
<td>BS</td>
<td>—</td>
<td>American Indian Studies Program</td>
</tr>
<tr>
<td>Anthropology</td>
<td>BA</td>
<td>—</td>
<td>School of Human Evolution and Social Change</td>
</tr>
<tr>
<td>Asian Languages (Chinese/Japanese)</td>
<td>BA</td>
<td>—</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>BA</td>
<td>—</td>
<td>Department of Chemistry and Biochemistry</td>
</tr>
<tr>
<td></td>
<td>BS</td>
<td>Optional: medicinal chemistry¹</td>
<td>Department of Chemistry and Biochemistry</td>
</tr>
<tr>
<td>Biology</td>
<td>BS</td>
<td>Optional: biology and society¹</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td>Chemistry</td>
<td>BA</td>
<td>—</td>
<td>Department of Chemistry and Biochemistry</td>
</tr>
<tr>
<td></td>
<td>BS</td>
<td>Optional: environmental chemistry¹</td>
<td>Department of Chemistry and Biochemistry</td>
</tr>
<tr>
<td>Chicana and Chicano Studies</td>
<td>BA</td>
<td>Humanities/cultural sciences or social sciences/policy</td>
<td>Department of Chicana and Chicano Studies</td>
</tr>
<tr>
<td>Clinical Laboratory Sciences</td>
<td>BS</td>
<td>—</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td>Communication</td>
<td>BA, BS</td>
<td>—</td>
<td>Hugh Downs School of Human Communication</td>
</tr>
<tr>
<td>Computational Mathematical Sciences</td>
<td>BS</td>
<td>—</td>
<td>Department of Mathematics and Statistics</td>
</tr>
<tr>
<td>Conservation Biology</td>
<td>BS</td>
<td>—</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td>Economics</td>
<td>BS</td>
<td>Creative writing, linguistics, or literature</td>
<td>Department of Economics²</td>
</tr>
<tr>
<td>Family and Human Development</td>
<td>BS</td>
<td>Optional: family studies/child development¹</td>
<td>Department of Family and Human Development</td>
</tr>
<tr>
<td>Film</td>
<td>BA</td>
<td>Film and media studies</td>
<td>College of Liberal Arts and Sciences</td>
</tr>
<tr>
<td>French</td>
<td>BA</td>
<td>—</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td>Geography</td>
<td>BA, BS</td>
<td>Meteorology-climatology or urban studies</td>
<td>Department of Geography</td>
</tr>
<tr>
<td>Geological Sciences</td>
<td>BS</td>
<td>—</td>
<td>Department of Geological Sciences</td>
</tr>
<tr>
<td>German</td>
<td>BA</td>
<td>—</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td>Global Studies</td>
<td>BA</td>
<td>—</td>
<td>School of Global Studies</td>
</tr>
<tr>
<td>History</td>
<td>BA</td>
<td>—</td>
<td>Department of History</td>
</tr>
<tr>
<td>Integrated Studies</td>
<td>BA, BS</td>
<td>—</td>
<td>College of Liberal Arts and Sciences</td>
</tr>
<tr>
<td>Italian</td>
<td>BA</td>
<td>—</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td>Justice Studies</td>
<td>BS</td>
<td>—</td>
<td>School of Justice and Social Inquiry</td>
</tr>
<tr>
<td>Kinesiology</td>
<td>BS</td>
<td>Exercise science, movement science, or teacher preparation²</td>
<td>Department of Kinesiology</td>
</tr>
<tr>
<td>Liberal Studies¹</td>
<td>BLS</td>
<td>—</td>
<td>College of Liberal Arts and Sciences</td>
</tr>
</tbody>
</table>

¹ If a major offers concentrations, one must be selected unless noted as optional.
² The department is in the W. P. Carey School of Business, which also offers this major, with different requirements.
³ This degree program has special eligibility requirements; for more information, contact the Office of Undergraduate Programs.
College of Liberal Arts and Sciences Baccalaureate Degrees and Majors (continued)

<table>
<thead>
<tr>
<th>Major</th>
<th>Degree</th>
<th>Concentration¹</th>
<th>Administered By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>BA</td>
<td>—</td>
<td>Department of Mathematics and Statistics</td>
</tr>
<tr>
<td></td>
<td>BS</td>
<td>Optional: statistics¹</td>
<td>Department of Mathematics and Statistics</td>
</tr>
<tr>
<td>Microbiology</td>
<td>BS</td>
<td>—</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td>Molecular Biosciences/</td>
<td>BS</td>
<td>—</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td>Biotechnology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philosophy</td>
<td>BA</td>
<td>—</td>
<td>Department of Philosophy</td>
</tr>
<tr>
<td>Physics</td>
<td>BS</td>
<td>—</td>
<td>Department of Physics and Astronomy</td>
</tr>
<tr>
<td>Plant Biology</td>
<td>BS</td>
<td>Environmental science and ecology or plant biochemistry and molecular biology</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td>Political Science</td>
<td>BA, BS</td>
<td>—</td>
<td>Department of Political Science</td>
</tr>
<tr>
<td>Psychology</td>
<td>BA, BS</td>
<td>—</td>
<td>Department of Psychology</td>
</tr>
<tr>
<td>Religious Studies</td>
<td>BA</td>
<td>—</td>
<td>Department of Religious Studies</td>
</tr>
<tr>
<td>Russian</td>
<td>BA</td>
<td>—</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td>Sociology</td>
<td>BA</td>
<td>—</td>
<td>Department of Sociology</td>
</tr>
<tr>
<td>Spanish</td>
<td>BA</td>
<td>—</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td>Speech and Hearing Science</td>
<td>BS</td>
<td>—</td>
<td>Department of Speech and Hearing Science</td>
</tr>
<tr>
<td>Women and Gender Studies</td>
<td>BA</td>
<td>—</td>
<td>Women and Gender Studies Program</td>
</tr>
</tbody>
</table>

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

² The department is in the W. P. Carey School of Business, which also offers this major, with different requirements.

³ This degree program has special eligibility requirements; for more information, contact the Office of Undergraduate Programs.

SCHOOL OF EXTENDED EDUCATION

The university-wide School of Extended Education provides an interactive link between ASU and the diverse communities it serves. The college assesses lifelong learning requirements and works in partnership with campuses, other colleges, and the community to serve learners, using a network of locations, programs, schedules, and technologies.

For more information, see “School of Extended Education,” page 134, or access the Web site at www.asu.edu/xed.

UNIVERSITY GRADUATION REQUIREMENTS

In addition to fulfilling college and major requirements, students must meet all university graduation requirements. For complete information, see “University Graduation Requirements,” page 89.

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, as described in “General Studies,” page 93. Note that all three General Studies awareness areas are required. Consult an advisor for an approved list of courses.

General Studies courses are listed in the “General Studies Courses” table, page 96, in the course descriptions, in the Schedule of Classes, and in the Summer Sessions Bulletin.

COLLEGE GRADUATION REQUIREMENTS

All students in the College of Liberal Arts and Sciences (CLAS) must complete the university General Studies requirement as well as all requirements in the major. In addition, the college has established requirements that are specific to the Bachelor of Arts and Bachelor of Science degrees.

A. Bachelor of Arts Degrees. Students pursuing BA degrees in the CLAS must demonstrate intermediate proficiency in a second language by completing the courses specified below with a grade of “C” (2.00) or higher in each course. Second language course requirements consist of:

1. completion of second language course work at the intermediate level (202 or equivalent), those students completing this requirement in
Ancient Greek must take both GRK 301 and 302; students completing the requirement in Portuguese or Romanian must complete POR 314 or ROM 314);  
2. a foreign language course at the 300 level or higher taught in the foreign language and having 202 or its equivalent as a prerequisite;  
3. completion of secondary education at a school in which the language of instruction is not English; or  
4. completion of SHS 202 American Sign Language IV or its equivalent.

B. Bachelor of Science degrees. Students pursuing BS degrees in the CLAS must complete six semester hours (two courses) of “Science and Society” courses. Students should consult with an advisor in the department or school of their major for a list of appropriate courses.

C. All students are required to take a minimum of MAT 119 or higher. A grade of “C” (2.00) or higher must be earned in the chosen mathematics course.

Major Requirements
Each student is required to select a major from among the fields of study offered by CLAS. The requirements for completion of the major are described under departmental listings.

A. The major department may require up to 45 semester hours of course work. The minimum is 30 hours. No more than 60 semester hours of course work may be required to complete the major, related courses, and prerequisites. Some departments require calculus-level mathematics; up to five of these semester hours may be excluded from the 60-hour maximum because they satisfy the mathematics proficiency requirement. A minimum of 12 upper-division hours in the major must be taken in residence.

B. No credit is granted toward fulfilling major or minor requirements in any upper-division course in that subject field unless the grade in that course is at least a “C” (2.00). In CLAS, the assignment of a grade of “Y” indicates a level of performance that would have resulted in a grade of at least “C” (2.00) had the normal grading scheme been used.

C. Major fields of study are classified into the following three divisions:

1. Humanities:
   - Asian Languages (Chinese/Japanese) (CHI/JPN)
   - English (ENG)
   - French (FRE)
   - Film and Media Studies (FMS)
   - German (GER)
   - History (HST)
   - Italian (ITA)
   - Philosophy (HPS, PHI)
   - Religious Studies (REL)
   - Russian (RUS)
   - Spanish (SPA)

2. Natural sciences and mathematics:
   - Biochemistry (BCH)
   - Biology (BIO)
   - Chemistry (CHM)
   - Clinical Laboratory Sciences (CLS)
   - Computational Mathematical Sciences (MAT)
   - Conservation Biology (BIO)
   - Geological Sciences (GLG)
   - Kinesiology (KIN)
   - Mathematics (MAT)
   - Microbiology (MIC)
   - Molecular Biosciences/Biotechnology (MBB)
   - Physics (AST, PHS, PHY)
   - Plant Biology (PLB)
   - Psychology (PGS, PSY)
   - Speech and Hearing Science (SHS)

3. Social Sciences:
   - African and African American Studies (AFH, AFR, AFS)
   - American Indian Studies (AIS)
   - Anthropology (ASB)
   - Chicana and Chicano Studies (CSH, CSS)
   - Communication (COM)
   - Economics (ECN)
   - Family and Human Development (CDE, FAS)
   - Geography (GCU, GPH)
   - Global Studies (SGS)
   - Justice and Social Inquiry (JUS)
   - Political Science (POS)
   - Sociology (SOC)
   - Women and Gender Studies (WSH, WST)

General Electives
Most CLAS majors can meet all of the above requirements with fewer than the 120 semester hours required for graduation. Remaining hours are general electives that may be selected from any of the departments of CLAS and from the offerings of the other colleges.

Declaration of Graduation. The declaration of graduation, which is required by university regulations during the semester in which an undergraduate earns the 87th hour, must be filed and approved at least two weeks before the preregistration period for the subsequent semester. Students should run a new Degree Audit Reporting System report every semester to gauge how well they are meeting all requirements for graduation. Students should contact the Office of Undergraduate Programs, in FOUND 110, regarding college graduation rules and deadlines. Deadlines for filing the declaration of graduation after enrolling in the 87th hour are March 1 and October 1 of each year. Students with 87 hours must have a college-approved declaration of graduation before registering for the next semester.
Credit Requirement. All candidates for graduation in the BA and BS degree curricula are required to complete at least 120 semester hours, of which at least 45 hours must consist of upper-division courses. A minimum ASU cumulative GPA of 2.00 is required for graduation.

Concurrent Degrees. Students who wish to obtain concurrent degrees must realize that there are certain combinations that would not be approved because there is too great an overlap between the courses required for each major. For example, students may not obtain concurrent degrees in two life sciences. Students who wish to obtain concurrent degrees may not double-count courses from one major to the next, but must have at least 30 different semester hours in each major.

Course Load. The normal course load is 15 to 16 semester hours. First-semester freshmen and entering transfer students are not permitted to register for more than 18 semester hours in the initial semester. Other students who wish to register for more than 18 hours must have a GPA of at least 3.00 and must file a petition in the Office of Undergraduate Programs, in FOUND 110, before registration. Any petition for an overload in excess of 21 hours must be presented to the Standards Committee of the college. No student should assume that his or her petition for overload will be granted.

SPECIAL CREDIT OPTIONS

Pass/Fail Grade Option. The pass/fail grade option is intended to broaden the education of Liberal Arts and Sciences undergraduates by encouraging them to take advanced courses outside their specialization. A mark of “P” contributes to the student’s earned hours but does not affect the GPA. A failing grade is computed into the GPA. Only CLAS students with at least 60 semester hours may take courses under the pass/fail option. The option may be used under the following conditions:

1. enrollment for pass/fail needs the approval of the instructor and the college;
2. enrollment under this option must be indicated during registration and may not be changed after the late registration period; and
3. a maximum of 12 hours taken for pass/fail may be counted toward graduation.

Students may not enroll under the pass/fail option in the following courses:

1. those taken to satisfy the second language or First-Year Composition requirements;
2. those in the student’s major, minor, or certificate program;
3. those counted toward or required to supplement the major;
4. those counted as 499 Individualized Instruction;
5. those taken for honors credits; or
6. those counted toward satisfying the CLAS graduation requirements or the General Studies requirement.

Audit Grade Option. A student may choose to audit a course in which he or she attends regularly scheduled class sessions but earns no credit. The student should obtain the instructor’s approval before registering for the course. For more information, see “Grading System,” page 82.

Note: This grade option may not be changed after the drop/add period.

Independent Learning. Study by Independent Learning is not a normal part of a degree program; special circumstances must exist for a degree-seeking student to take Independent Learning courses. Any enrollment in such courses must have the prior approval of the college.

ACADEMIC STANDARDS

The standards for GPA and the terms of probation, disqualification, reinstatement, and appeal are identical to those of the university as set forth under “Retention and Academic Standards,” page 86, except that the disqualified student in CLAS is suspended for at least two regular semesters at the university. When students are placed on probation, one of three things can happen:

1. the student may raise his or her cumulative GPA to academic good standing (see “Academic Good Standing,” page 86) by taking new classes and be returned to good standing.
2. the student may receive the required semester GPA, but not raise the cumulative GPA to academic good standing, in which case, the student may continue on probation, earning the required semester GPA, for as many semesters as it takes to raise the cumulative GPA to good standing; or
3. the student may fail to achieve the required semester GPA and be disqualified.

Students who leave the university for a semester or more while on probation are not automatically readmitted. Such students, as well as all disqualified students, should contact the Office of Undergraduate Programs in FOUND 110, regarding procedures and guidance for reinstatement and returning to good standing. By following recommendations and meeting established standards for summer school work or course work at other institutions, the possibility of successful reinstatement is enhanced. Academic discipline is one of the functions of the Office of Undergraduate Programs. All students having academic difficulties of any kind should contact this office. Also available in this office is information on policies and procedures of the college on academic honesty, student grievances with respect to grades, and various petitions regarding college standards and graduation requirements.

Academic honesty is expected of all students in all examinations, papers, academic transactions, and records. The possible sanctions include, but are not limited to, appropriate grade penalties, loss of registration privileges, disqualification, and dismissal.
**College of Liberal Arts and Sciences Graduate Degrees and Majors**

<table>
<thead>
<tr>
<th>Major</th>
<th>Degree</th>
<th>Concentration</th>
<th>Administered By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>MA, PhD</td>
<td>Archaeology, bioarchaeology, linguistics, museum studies, physical anthropology, or social-cultural anthropology</td>
<td>School of Human Evolution and Social Change</td>
</tr>
<tr>
<td></td>
<td>MA</td>
<td>Archaeology, physical anthropology, or social-cultural anthropology</td>
<td>School of Human Evolution and Social Change</td>
</tr>
<tr>
<td>Asian Languages and Civilizations—Chinese/Japanese</td>
<td>MA</td>
<td>—</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td>Audiology</td>
<td>AuD</td>
<td>—</td>
<td>Department of Speech and Hearing Science</td>
</tr>
<tr>
<td>Biology</td>
<td>MS, PhD</td>
<td>Optional: ecology</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td>Chemistry</td>
<td>MS, PhD</td>
<td>Analytical chemistry, biochemistry, geochemistry, inorganic chemistry, organic chemistry, physical chemistry, or solid-state chemistry</td>
<td>Department of Chemistry and Biochemistry</td>
</tr>
<tr>
<td>Communication</td>
<td>MA</td>
<td>—</td>
<td>Hugh Downs School of Human Communication</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>Communicative development, intercultural communication, or organizational communication</td>
<td>Hugh Downs School of Human Communication</td>
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<tr>
<td>Communication Disorders</td>
<td>MS</td>
<td>—</td>
<td>Department of Speech and Hearing Science</td>
</tr>
<tr>
<td>Computational Biosciences</td>
<td>PSM</td>
<td>—</td>
<td>College of Liberal Arts and Sciences</td>
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<tr>
<td>Creative Writing</td>
<td>MFA</td>
<td>—</td>
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<tr>
<td>English</td>
<td>MA</td>
<td>Comparative literature, English linguistics, literature and language, or rhetoric and composition</td>
<td>Department of English</td>
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<tr>
<td></td>
<td>PhD</td>
<td>Literature or rhetoric/composition and linguistics</td>
<td>Department of English</td>
</tr>
<tr>
<td>Family and Human Development</td>
<td>MS</td>
<td>Optional: family studies</td>
<td>Department of Family and Human Development</td>
</tr>
<tr>
<td>Family Science</td>
<td>PhD</td>
<td>Optional: marriage and family therapy</td>
<td>Department of Family and Human Development</td>
</tr>
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<td>French</td>
<td>MA</td>
<td>Comparative literature, linguistics, or literature</td>
<td>Department of Languages and Literatures</td>
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<tr>
<td>Geographic Information Systems</td>
<td>MAS</td>
<td>—</td>
<td>Department of Geography</td>
</tr>
<tr>
<td>Geography</td>
<td>MA, PhD</td>
<td>—</td>
<td>Department of Geography</td>
</tr>
<tr>
<td>Geological Sciences</td>
<td>MS, PhD</td>
<td>—</td>
<td>Department of Geological Sciences</td>
</tr>
<tr>
<td>German</td>
<td>MA</td>
<td>Comparative literature, language and culture, or literature</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td>History</td>
<td>MA</td>
<td>Asian history, British history, European history, Latin American history, public history, U.S. history, or U.S. Western history</td>
<td>Department of History</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>Asian history, British history, European history, Latin American history, or U.S. history</td>
<td>Department of History</td>
</tr>
</tbody>
</table>

1. If a major offers concentrations, one must be selected unless noted as optional.
2. This program is administered by the Division of Graduate Studies.
3. Students may pursue this degree only in conjunction with the doctoral degree in the same unit, which admits students to only the doctoral degree program.
## College of Liberal Arts and Sciences Graduate Degrees and Majors (continued)

<table>
<thead>
<tr>
<th>Major</th>
<th>Degree</th>
<th>Concentration</th>
<th>Administered By</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Justice Studies</strong></td>
<td>MS</td>
<td>Optional: criminal and juvenile justice; dispute resolution; law, justice, and minority populations; law, policy, and evaluation; or women, law, and justice&lt;sup&gt;1&lt;/sup&gt;</td>
<td>School of Justice and Social Inquiry</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td></td>
<td>School of Justice and Social Inquiry</td>
</tr>
<tr>
<td><strong>Kinesiology</strong></td>
<td>MS</td>
<td>Biomechanics, motor behavior/sport psychology, or physiology of exercise</td>
<td>Department of Kinesiology</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td></td>
<td>Committee on Exercise Science</td>
</tr>
<tr>
<td><strong>Liberal Studies</strong></td>
<td>MLSt</td>
<td></td>
<td>College of Liberal Arts and Sciences</td>
</tr>
<tr>
<td><strong>Materials Science</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>MS</td>
<td></td>
<td>Committee on the Science and Engineering of Materials</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>MA</td>
<td></td>
<td>Department of Mathematics and Statistics</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>Optional: computational biosciences&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Department of Mathematics and Statistics</td>
</tr>
<tr>
<td><strong>Microbiology</strong></td>
<td>MS, PhD</td>
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<td>School of Life Sciences</td>
</tr>
<tr>
<td><strong>Molecular and Cellular Biology</strong></td>
<td>MS</td>
<td></td>
<td>Interdisciplinary Committee on Molecular and Cellular Biology</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>Optional: computational biosciences&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Interdisciplinary Committee on Molecular and Cellular Biology</td>
</tr>
<tr>
<td><strong>Natural Science</strong></td>
<td>MNS</td>
<td>Biology, microbiology, or plant biology Chemistry</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Geological sciences Mathematics</td>
<td>Department of Chemistry and Biochemistry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physics</td>
<td>Department of Geological Sciences</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Department of Mathematics and Statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Department of Physics and Astronomy</td>
</tr>
<tr>
<td><strong>Philosophy</strong></td>
<td>MA, PhD</td>
<td></td>
<td>Department of Philosophy</td>
</tr>
<tr>
<td><strong>Physics</strong></td>
<td>MS, PhD</td>
<td></td>
<td>Department of Physics and Astronomy</td>
</tr>
<tr>
<td><strong>Plant Biology</strong></td>
<td>MS, PhD</td>
<td>Optional: ecology or photosynthesis&lt;sup&gt;1&lt;/sup&gt;</td>
<td>School of Life Sciences</td>
</tr>
<tr>
<td><strong>Political Science</strong></td>
<td>MA, PhD</td>
<td>American politics, comparative politics, international relations, or political theory</td>
<td>Department of Political Science</td>
</tr>
<tr>
<td><strong>Psychology</strong></td>
<td>MA&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Behavioral neuroscience, clinical psychology, cognitive/behavioral systems, developmental psychology, quantitative research methods, or social psychology</td>
<td>Department of Psychology</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td></td>
<td>Department of Psychology</td>
</tr>
<tr>
<td><strong>Religious Studies</strong></td>
<td>MA, PhD</td>
<td></td>
<td>Department of Religious Studies</td>
</tr>
<tr>
<td><strong>Science and Engineering of Materials</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>PhD</td>
<td>High-resolution nanostructure analysis or solid-state device materials design</td>
<td>Committee on the Science and Engineering of Materials</td>
</tr>
<tr>
<td><strong>Sociology</strong></td>
<td>MA, PhD</td>
<td></td>
<td>Department of Sociology</td>
</tr>
<tr>
<td><strong>Spanish</strong></td>
<td>MA</td>
<td>Comparative literature, language and culture, linguistics, or literature</td>
<td>Department of Languages and Literatures</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>Cultural studies or literature</td>
<td>Department of Languages and Literatures</td>
</tr>
</tbody>
</table>

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

<sup>2</sup> This program is administered by the Division of Graduate Studies.

<sup>3</sup> Students may pursue this degree only in conjunction with the doctoral degree in the same unit, which admits students to only the doctoral degree program.
### SPECIAL PROGRAMS

**Barrett Honors College.** CLAS works closely with the Barrett Honors College, which affords qualified undergraduates opportunities for enhanced educational experiences. For a complete description of requirements and opportunities, see “The Barrett Honors College,” page 145.

**CLASWorks.** The college provides a comprehensive career management program for all CLAS majors: CLASWorks. This program includes a first-year seminar as well as an upper-division course in career management. Individualized advising sessions, career events, and a Web-based list of CLASWorks contacts are available. Students are encouraged to meet with the director of CLASWorks during their first semester at ASU to explore opportunities in full- and part-time employment, volunteerism, and internships. For more information, call 480/965-6506, or access the Web site at clas.asu.edu/students/clasworks.

**Integrated Studies.** An Integrated Studies major leading to the BA or BS degree provides students of outstanding ability in the humanities, natural sciences and mathematics, and social and behavioral sciences opportunities to pursue courses of study that cut across departmental boundaries and focus on specific topics or problem areas. Completion of 32 semester hours at ASU with a GPA of at least 3.25 and three letters of recommendation from ASU faculty members are required for admission. For more information about degree requirements, visit the Office of Undergraduate Programs in FOUND 110.

**Learning Communities.** These nine to 12 semester hour communities allow students to explore an important topic in depth, in mainly small classes, while earning a number of General Studies credits and completing their university writing requirement. The CLAS Learning Communities offer students an opportunity to learn how to think about issues on multiple levels and apply skills across different domains. Course material and extracurricular activities are integrated to enhance the student’s intellectual development. Each Learning Community is limited to fewer than 100 students, enabling the student to develop a supportive network of peers on campus. For more information, including residence hall information, access the Web site at clas.asu.edu/students/learningcommunities.

**Bachelor of Liberal Studies.** The College of Liberal Arts and Sciences offers a 120-semester-hour undergraduate degree completion program in Liberal Studies to Arizona students who have previously earned 60 to 90 semester hours at one of the Arizona universities or community colleges and meet our eligibility requirements. This degree completion program is most suitable for working adults since courses will be offered online and via independent study. There will be registration and individualized instruction fees in addition to tuition. For more information on eligibility requirements, call the Office of Undergraduate Programs at 480/965-6506.

**Washington Semester Program.** Students have a variety of opportunities for practicum and internship experiences that enable them to meld classroom learning with practical application. Among the several individual departmental programs that provide internships for majors, the Department of Political Science is the ASU sponsor of the Washington Semester Program. The program provides students a one-semester opportunity to study in Washington, D.C., through any one of several programs sponsored by the American University. The program is available to outstanding juniors or seniors and requires careful planning with an academic advisor early in the student’s career. For more information, call the Department of Political Science at 480/965-6551.

**Military Officer Training.** The Departments of Aerospace Studies and Military Science offer programs leading to commissions in the armed forces, but they do not offer majors or minors. For more information, see the appropriate department descriptions in this catalog.
Certificate Programs and Areas of Emphasis

Certificates are available from numerous units in CLAS, and one collegewide Enriched College Degree Certificate is available to any major in the college as shown in the “CLAS Certificates” table, page 510. Areas of emphasis are also available in some of the same subjects (e.g., Latin American Studies).

Enriched College Degree. CLAS offers an Enriched College Degree Certificate, available to any student within the university.

The Enriched College Degree Certificate consists of a minimum of 15 semester hours with a minimum of "C" (2.00) grade credit. The certificate consists of

1. a theme requirement composed of a three-course sequence outside the student’s major, characterized by an identifiable theme of intellectual relevance for students (courses used for the theme requirement cannot be from one’s major, minor, or another certificate);
2. an approved upper-division bridge course selected to address the relationships among areas of inquiry and means of acquiring knowledge; and
3. an approved upper-division course in spoken English to provide a meaningful opportunity for substantive oral presentations.

For more information, visit the CLAS Office of Undergraduate Programs, in FOUND 110, or call 480/965-6506.

Asian Studies. Asian and East Asian Studies certificates are offered through the Center for Asian Studies. The certificates provide students with official transcript recognition of specialization in Asian Studies related to their major area of study.

The certificate curriculum includes 24 semester hours of course work:

1. 15 semester hours of upper-division area studies course work in at least three disciplines outside of languages and literature courses (such as anthropology, art, geography, history, political science, and religious studies); and
2. nine additional semester hours may be some combination of lower- and/or upper-division courses. Six hours may be satisfied with language and literature courses limited to 321 and above.

In addition, certificate students must demonstrate proficiency in an Asian language at the intermediate level. The language requirement can be satisfied by completing the 201 and 202 sequence, one year of study abroad at the intermediate level, or satisfactory placement on a proficiency exam. Asian languages include Chinese, Hindi/Urdu, Indonesian, Japanese, Korean, Lao, Thai, and Vietnamese. Students pursuing an East Asian Certificate must fulfill the language requirement in either Chinese, Japanese, or Korean, and the 15 hours of upper-division course work must be courses with significant focus on East Asia chosen in consultation with the Center for Asian Studies advisor.

A graduate certificate in Asian Studies is also available. For more information, see the Graduate Catalog.

BIS Concentrations. An Asian studies concentration is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

An Asian Studies concentration requires 23 to 25 semester hours of course work:

1. one year of an Asian language consisting of 10 semester hours of lower-division courses or six semester hours of upper-division courses;
2. 12 semester hours of upper-division area studies courses drawn from at least two disciplines outside of languages and literatures; and
3. three to six semester hours of lower- or upper-division approved area studies courses; three of these remaining hours may be satisfied with languages and literatures courses limited to 321 and above.

BIS students pursuing an Asian Studies concentration will be required to consult with the academic advisor of the Center for Asian Studies as well as the BIS advisor. Students are strongly encouraged, but not required, to continue Asian language study beyond the concentration requirement.


Classical Studies. Students admitted to undergraduate degree programs in any field are eligible for the Classical Studies certificate program. In addition to the course work and examinations required in the student’s major, the student is responsible for fulfilling the following minimum requirements:

1. five semesters of ancient Greek (17 semester hours; GRK 301 and 302 may be repeated for credit) or Latin (19 semester hours) language and literature instruction;
2. two semesters (six semester hours), in courses related to classical studies (to be approved by coordinators of the certificate); and
3. a thesis (three semester hours), a Barrett Honors College thesis (six semester hours) or two additional courses at or above the 300 level (six semester hours); and
4. a minimum grade of “C” (2.00) in each course leading to the certificate.

Students interested in the Classical Studies certificate program need to submit an application before being accepted into the program. For more information, call the program coordinators at 480/965-1110 or 727-6512.

# COLLEGE OF LIBERAL ARTS AND SCIENCES

## CLAS Certificates

<table>
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<tr>
<th>Certificate Program</th>
<th>Administered By</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>College of Liberal Arts and Sciences Enriched Certificate</td>
<td>CLAS</td>
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</tr>
<tr>
<td>African and African American Studies Certificate</td>
<td>African and African American Studies Program</td>
<td>519</td>
</tr>
<tr>
<td>African and African Diaspora Studies, Graduate Certificate in¹</td>
<td>African and African American Studies Program</td>
<td>—</td>
</tr>
<tr>
<td>American Indian Studies Certificate</td>
<td>American Indian Studies Program</td>
<td>523</td>
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<tr>
<td>Asian Pacific American Studies Certificate</td>
<td>Asian Pacific American Studies Program</td>
<td>524</td>
</tr>
<tr>
<td>Asian Studies Certificate²</td>
<td>Center for Asian Studies</td>
<td>509</td>
</tr>
<tr>
<td>Asian Studies, Graduate Certificate in¹</td>
<td>Center for Asian Studies</td>
<td>—</td>
</tr>
<tr>
<td>Atmospheric Sciences, Graduate Certificate in¹</td>
<td>CLAS and Ira A. Fulton School of Engineering</td>
<td>—</td>
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<td>Civic Education Certificate</td>
<td>Department of Political Science</td>
<td>629</td>
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<tr>
<td>Classical Studies Certificate</td>
<td>Department of Languages and Literatures</td>
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</tr>
<tr>
<td>Early Intervention Certificate</td>
<td>Department of Family and Human Development and School of Social Work</td>
<td>511</td>
</tr>
<tr>
<td>East Asian Studies Certificate</td>
<td>Center for Asian Studies</td>
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</tr>
<tr>
<td>Ethics Certificate</td>
<td>Department of Philosophy</td>
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<tr>
<td>Geographic Information Science Certificate</td>
<td>Department of Geography</td>
<td>511</td>
</tr>
<tr>
<td>Geographic Information Science, Interdisciplinary Certificate in¹</td>
<td>CLAS and Division of Graduate Studies</td>
<td>—</td>
</tr>
<tr>
<td>Healthcare Organizations and Society, Certificate in</td>
<td>School of Life Sciences and the W. P. Carey School of Business</td>
<td>511</td>
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<tr>
<td>History and Philosophy of Science Certificate</td>
<td>School of Life Sciences</td>
<td>512</td>
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<tr>
<td>International Studies Certificate</td>
<td>Department of Political Science</td>
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<tr>
<td>Islamic Studies Certificate</td>
<td>Department of Religious Studies</td>
<td>512</td>
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<tr>
<td>Jewish Studies Certificate</td>
<td>Jewish Studies Committee</td>
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</tr>
<tr>
<td>Latin American Studies Certificate²</td>
<td>Latin American Studies Center</td>
<td>512</td>
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<tr>
<td>Linguistics, Graduate Certificate in¹</td>
<td>Committee on Linguistics</td>
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<tr>
<td>Medieval and Renaissance Studies Certificate</td>
<td>Arizona Center for Medieval and Renaissance Studies (ACMRS)</td>
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<tr>
<td>Medieval Studies Certificate¹</td>
<td>ACMRS</td>
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<tr>
<td>Museum Studies Certificate¹</td>
<td>School of Human Evolution and Social Change</td>
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<td>Renaissance Studies Certificate¹</td>
<td>ACMRS</td>
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<tr>
<td>Russian and East European Studies Certificate²</td>
<td>Russian and East European Studies Center</td>
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<tr>
<td>Scandinavian Studies Certificate</td>
<td>Department of Languages and Literatures</td>
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<tr>
<td>Scholarly Publishing Certificate¹</td>
<td>Department of History</td>
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<tr>
<td>Southeast Asian Studies Certificate</td>
<td>Program for Southeast Asian Studies</td>
<td>514</td>
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<tr>
<td>Statistics, Certificate in¹</td>
<td>Committee on Statistics and the Division of Graduate Studies</td>
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<tr>
<td>Symbolic Systems, Certificate in</td>
<td>Department of Philosophy</td>
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<tr>
<td>Translation Certificate</td>
<td>Department of Languages and Literatures</td>
<td>583</td>
</tr>
<tr>
<td>Women and Gender Studies Certificate</td>
<td>Women and Gender Studies Program</td>
<td>514</td>
</tr>
<tr>
<td>Writing Certificate</td>
<td>Department of English</td>
<td>538</td>
</tr>
</tbody>
</table>

¹ For more information, see the Graduate Catalog.

² Emphases are also available in these programs.
**BIS Concentration.** Concentrations in (1) classical studies—Greek or (2) classical studies—Latin are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**Geographic Information Science.** The cross-disciplinary undergraduate certificate in Geographic Information Science (GIS) is designed for undergraduates wishing to pursue a GIS-related career. The certificate is awarded to students completing the following 19 semester hours with a grade of “C” (2.00) or higher.

**Required Courses**

- CSE 100 Principles of Programming with C++ CS .................3
- GCU 495 Quantitative Methods in Geography CS ................3
- GPH 370 Geographic Information Technologies CS .............3
- GPH 373 Geographic Information Science I CS .................4
- GPH 473 Geographic Information Science II CS ...............3
- Elective (choose from the courses below) ..........................3
  - ABS 485 GIS in Natural Resources (3)
  - ABS 586 Remote Sensing in Environmental Resources (4)
  - GCU 361 Urban Geography SB (3)
  - GCU 441 Economic Geography SB (3)
  - GCU 442 Geographical Analysis of Transportation SB (3)
  - GPH 371 Introduction to Cartography and Geopresentation CS (3)
  - GPH 372 Air Photo Interpretation (3)
  - GPH 471 Geographics: Interactive and Animated Cartography and Geovisualization CS (3)
  - GPH 481 Environmental Geography (3)
  - GPH 483 Geographic Information Analysis (3)
  - GPH 484 Internship: GIS-Based (3)
  - PLB 434 Landscape Ecological Analysis and Modeling (3)

For more information, call the Department of Geography at 480/965-7533.

**Healthcare Organizations and Society.** The certificate program is designed to allow undergraduate students interested in healthcare and the healthcare industry to access a broad range of disciplinary approaches and issues relevant to the subject.

To complete the certificate, students must take 18 semester hours of course work. Before starting the program students should seek advice and information in the School of Life Sciences Student Services Office in the College of Liberal Arts and Sciences or Business Honors advising in the W. P. Carey School of Business.

The course work must conform to the following structure and must be drawn from the three areas listed below. Additional courses are permissible with the approval of an advisor. In addition, students must meet the following requirements:

1. complete 18 semester hours, 12 of which must be in the upper division;
2. earn a “C” or higher in all upper-division courses taken for the certificate; and
3. complete at least 12 of the semester hours for the certificate in residence at ASU.

**Early Intervention.** The Early Intervention Certificate is cross-disciplinary and is certified by the Arizona Early Intervention Program in the Arizona State Department of Economic Security. Students interested in earning the certificate must make formal application to the director of the Early Intervention Training Program. Students must have completed 56 semester hours and have a cumulative GPA of at least 2.50. Students are required to complete the application form for the Early Intervention Certificate. The proposed certificate entails 17 semester hours of required course work. All 17 semester hours must be ASU credit.

**Required Courses**

- CDE 337 Early Childhood Intervention ................................3
- SWU 437 Infant Family Assessment and Observation L/SB ........3
- SWU 446 Risk and Variation in Child Development..............3
- Choose from the following combinations..........................8
  - CDE 338 Child Development Practicum (3)
  - FAS 484 Internship (5)
  - SWU 412 Field Instruction I (5)
  - SWU 414 Field Instruction II (3)

All students admitted by the program are advised by the director of the Early Intervention Training Program through completion of the certificate requirements. Advising includes identifying field placements for FAS 484 and SWU 412 and SWU 414. Completion of the certificate is verified by completion of all required courses with a grade of “C” (2.00) or higher in each course.

**Ethics.** This certificate is designed to give students a richer understanding of systematic philosophical thinking about ethics. Students with majors in business, nursing, journalism, and public administration, among others, may well find that training in ethics is beneficial for their career goals. The certificate program permits some flexibility about course selection, thereby facilitating the interests of many students. For more information, visit the Department of Philosophy in COOR 3309, or call 480/965-3394.

**BIS Concentration.** A concentration in ethics is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their academic interests that might not be satisfied with existing majors.
Overview of the U.S. Healthcare Industry. HSM 220 Health Care Organizations is required. HSM 498 PS: Health Economics is required for business students. HSM 561 Biostatistics may be taken by petition. No more than three courses in this area may be taken.

Ethical and Legal Issues in Healthcare. PHI 320 Bioethics is required. A second course is also required, PAF 460 Public Service Ethics or HSM 498 PS: Legal and Ethical Issues in Healthcare. No more than three courses in this area may be taken.

Anthropological, Historical, and Social Perspectives on Healthcare. One course is required. No more than two courses in this area may be taken, from among ASB 462 Medical Anthropology: Culture and Health, HPS 331 History of Medicine, and SOC 427 Sociology of Health and Illness.

For more information, visit the School of Life Sciences in LSC 206, or call 480/727-6277. Or visit Business Honors in the W. P. Carey School of Business in BA 150, or call 480/965-8710.

History and Philosophy of Science. The School of Life Sciences offers an undergraduate History and Philosophy of Science Certificate. The certificate program is designed to give students an understanding of both traditional philosophic issues surrounding science and the historical development of concrete scientific theories and ideas. The philosophic questions, of the belief-worthiness and interpretation of scientific claims as well as norms within or about science, both enrich and are enriched by their combination with historical study. Such philosophic and historical study will also often include the examination of contemporary sciences and their place within the larger society.

The certificate requires 18 semester hours bearing a PHI or HPS prefix of which 12 semester hours must be upper-division. Included within the 18 semester hours, at least nine must bear the HPS prefix. PHI 314 Philosophy of Science is also required. All courses counting toward the certificate must be approved for this purpose by an undergraduate advisor and passed with a grade of “C” (2.00) or higher.

For more information, visit the School of Life Sciences in LSC 206, or call 480/727-6277.


Islamic Studies Certificate. Students admitted to undergraduate degree programs in any field are eligible for the Islamic Studies Certificate program. Students who complete all the requirements of their major, their college, and the certificate program receive the certificate plus transcript recognition of their particular emphasis. The certificate program is designed to prepare students for graduate programs in Religious Studies, Islamic studies, and area studies or for any academic discipline (such as professional programs in international law and business) that focuses on global Muslim societies. Students must complete a minimum total of 26 semester hours, chosen in consultation with the Islamic Studies program coordinator. A minimum grade of “C” (2.00) is required in each course. To earn the certificate, students must complete these requirements:

1. eight semester hours of Arabic, Indonesian, or another language approved by the program coordinator; students who are native speakers of these languages or who otherwise have equivalent knowledge substitute two additional courses approved by the program coordinator;
2. nine semester hours from REL 260 Introduction to Islam, REL 365 Islamic Civilization, and REL 366 Islam in the Modern World;
3. three semester hours taken from REL 394 (topics may vary) or REL 460 Studies in Islamic Religion (topics may vary); and
4. six semester hours drawn from an approved list of courses in Arabic, anthropology, French, geography, history, religious studies, Spanish or from other courses approved by the program coordinator.

Direct inquiries about the program to the Department of Religious Studies, ECA 377, or call 480/965-7145.

Jewish Studies. The Jewish studies program is designed with the following goals in mind:
1. to examine the history and culture of the Jews;
2. to provide a model for interdisciplinary teaching and research;
3. to generate and facilitate research on Judaica;
4. to provide the community with programs, courses, and research furthering the understanding of Judaica; and
5. to stand as an example of the university’s commitment to a program of meaningful ethnic studies on a firm academic base.

The Certificate of Concentration in Jewish Studies may be combined with a major in any college. For information about the program, visit the Jewish Studies program office in the Department of Religious Studies, or access the Web site at asu.edu/clas/jewishstudies/certificateinfo.htm.

BIS Concentration. A concentration in Jewish studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

Latin American Studies. The Latin American Studies Certificate program is designed to give students an understanding of culture, economies, political structures, and the history of Latin American nations. The Departments of Economics, Geography, History, Languages and Literatures (Spanish and Portuguese), and Political Science; the School of Human Evolution and Social Change; and the W. P. Carey School of Business offer courses that combine to make up the interdisciplinary certificate. Students must complete 30 semester hours of upper-division courses from the above departments-colleges with a concentration in Latin America—15 semester hours in the major subject and 15 semester hours in other disciplines. The certificate
requires Spanish or Portuguese proficiency through the 313 level of conversation and composition. Only language courses above 313 in literature and civilization count toward a major or interdisciplinary areas of preparation. Spanish and Portuguese courses above 313 in grammar and phonology do not count toward the major requirements. The Latin American Studies Center offers the area of emphasis for students who do not wish to attain a high level of language proficiency.

For more information, visit the Latin American Studies Center in COOR 4450, or call 480/965-5127.

**BIS Concentration.** A concentration in Latin American studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**Medieval and Renaissance Studies.** An undergraduate Certificate in Medieval and Renaissance Studies is offered by the Arizona Center for Medieval and Renaissance Studies (ACMRS). In addition to the course work and examinations required in a student’s major field of interest, the following minimum requirements must be fulfilled to earn the certificate:

1. six to eight semester hours of classical Latin and six to eight semester hours of Latin (classical and/or medieval) or of a vernacular language of the period (e.g., Old English, Old Norse, Old French, Renaissance Italian);
2. six to eight semester hours of course work in medieval and renaissance studies outside the major discipline;
3. three semester hours of thesis on a topic concerning the Middle Ages or Renaissance. The thesis may be used to fulfill the Honors College thesis requirement for students enrolled in the Barrett Honors College; and
4. a minimum of a “C” (2.00) average in all course work leading to the certificate.

Students interested in the certificate program need to complete an application form before being accepted into the program. Applications are available by calling ACMRS at 480/965-5900 or visiting COOR 4429.

See the Graduate Catalog for information about the Certificate in Medieval Studies and the Certificate in Renaissance Studies, and “Arizona Center for Medieval and Renaissance Studies,” page 44, for information about the center.

**BIS Concentration.** A concentration in medieval and Renaissance studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**Museum Studies.** See the Graduate Catalog or contact the Department of Anthropology for more information.

**Russian and East European Studies.** Undergraduate students may complete an interdisciplinary certificate program in Russian and East European studies while pursuing a bachelor’s degree in their chosen field. The requirements for the Russian and East European Studies Certificate comprise (1) three years (22 semester hours) of Russian or another Eurasian or East European language and (2) 30 upper-division semester hours in Russian, East European, and Eurasian area-related course work.

At least three disciplines must be represented in the area-related course work, and at least 12 semester hours must be outside the Department of Languages and Literatures (i.e., non-RUS and non-FLA courses). Fulfillment of these requirements is certified by the Russian and East European Studies Center and is recognized on the transcript by a bachelor’s degree with “Major in [Discipline], and Certificate in Russian and East European Studies.” The purpose of this undergraduate certificate program is to encourage students majoring in a chosen discipline to develop special competency in Russian or East European language and area studies. A student with a major in any department may pursue this certificate.

For more information, call 480/965-4188, or visit COOR 4465.

**BIS Concentration.** A concentration in Russian and East European studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**Scandinavian Studies.** Students admitted to undergraduate degree programs in any field are eligible for the Scandinavian Studies Certificate program. In addition to the course work and examinations required in the student’s major, the student is responsible for fulfilling the following minimum requirements (21 semester hours) before the certificate is issued:

1. six semester hours of Norwegian or Swedish at the 200 level or above;
2. three semester hours in SCA 250 Introduction to Scandinavian Culture;
3. nine semester hours of upper-division course work in Scandinavian Studies outside the student’s major discipline;

4. a minimum of a “C” (2.00) average in all course work leading to the certificate; and
5. three semester hours in an independent study thesis on a topic concerning Scandinavian Studies. The thesis may be used to fulfill the Barrett Honors College thesis requirement for students enrolled in the Barrett Honors College.

Students who test out of the basic language courses would, with advising, take other approved courses to fulfill the minimum requirement of 21 semester hours.

For more information, call the Department of Languages and Literatures at 480/965-6281.

BIS Concentration. A concentration in Scandinavian studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

Scholarly Publishing. See the Graduate Catalog for information on this certificate program.

Southeast Asian Studies. A Certificate in Southeast Asian Studies is available to any undergraduate student. The certificate program offers two options: (1) an area studies specialization emphasizing courses in the social sciences and humanities and requiring one year of Indonesian, Thai, or Vietnamese and (2) a language specialization requiring a two-year sequence in a Southeast Asian language and a proportional number of area studies courses.

Students wishing to study a Southeast Asian language other than those offered on campus may transfer credits earned at the Southeast Asian Studies Summer Institute, a consortium for intensive language and area studies, or at other accredited programs. Qualified students may request placement testing on other national languages of the region, other than those offered on campus. Students may request earned at the Southeast Asian Studies Summer Institute, a consortium for intensive language and area studies, or at other accredited programs. Qualified students may request placement testing on other national languages of the region, other than those offered on campus. Students may request placement testing on other national languages of the region, other than those offered on campus.

Courses counting toward the Certificate in Southeast Asian Studies fulfill requirements for undergraduate majors and General Studies in the social and behavioral sciences, humanities, literacy, and global and historical awareness areas. A two-year sequence in Southeast Asian language study meets the foreign language requirement for undergraduates in CLAS.

For more information, visit the Program for Southeast Asian Studies in COOR 6611 or call 480/965-4232.

BIS Concentrations. Concentrations in Southeast Asian studies (area studies option or language option) are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

Symbolic Systems. The Department of Philosophy offers a Certificate in Symbolic Systems. The certificate program takes an interdisciplinary approach to cognition, computation, and meaning. Course work is divided evenly between philosophy, psychology, and computer science in order to expose students to the subject matter from a conceptual, empirical, and practical point of view. The certificate may interest students with majors in any of the three disciplines on topics of common interest.

The certificate consists of 28 semester hours approved by an advisor in the Department of Philosophy and divided evenly between computer science and engineering, psychology, and philosophy as follows:

1. CSE 205, 210, and 240;
2. PSY 230 and 290 and either PSY 323, 324, or 437; and
3. either PHI 319, or 333, either PHI 315 or 317, and either PHI 312 or 314.

Students must satisfy the prerequisites for the listed courses. With written approval from the director of undergraduate studies in the Department of Philosophy, one substitution course from outside this list is allowed. All courses must be passed with a minimum grade of “C” (2.00).

For more information, visit the Department of Philosophy in COOR 3309, or call 480/965-3394.

Translation. See “Translation Certificate (Spanish/English),” page 583, for information about the Certificate in Translation.

Women and Gender Studies. Women and Gender Studies provides students with an intensive interdisciplinary liberal arts education that enables them to write well, think critically, and analyze problems effectively.

The certificate program is equivalent to an interdisciplinary minor, consisting of 18 credit hours, and is open to graduate as well as undergraduate students. Students pursuing a certificate in Women and Gender Studies must consult with the Women and Gender Studies advisor to select appropriate courses and fulfill requirements.

A Certificate of Concentration in Women and Gender Studies is awarded for the successful completion of WST 100 (or 300) and WST 377 or 378 and an additional 12...
DEPARTMENT OF AEROSPACE STUDIES

HUMANITIES (HUM)
As of fall 2005, the BA degree in Interdisciplinary Humanities was disestablished. A limited number of HUM courses are offered each semester. Access www.asu.edu/aad/catalogs/courses for the most current list of courses.

Department of Aerospace Studies
Air Force ROTC
www.asu.edu/clas/afrotc
480/965-3181
SS 352

Col. David W. Guthrie, Chair
Professor: Guthrie
Assistant Professors: Kwasnoski, Marks, Thomas

PURPOSE
The Department of Aerospace Studies curriculum consists of the general military course and history for freshmen and sophomores (AES 101, 102, 103, 104, 201, 202, 203, 204) and the professional officer course for juniors and seniors (AES 301, 302, 303, 304, 401, 402, 403, 404).

General Qualifications. Students entering the Air Force Reserve Officers’ Training Corps (AFROTC) must meet the following requirements:
1. be a citizen of the United States (noncitizens may enroll but must obtain citizenship before commissioning);
2. be of sound physical condition; and
3. be at least 17 years of age for scholarship appointment or admittance to the Professional Officer Course (POC).

Additionally, scholarship recipients must be able to fulfill commissioning requirements by age 27. If designated for flying training, the student must be able to complete all commissioning requirements before age 29; persons in other categories must be able to complete all commissioning requirements before age 35.

FOUR-YEAR PROGRAM (GMC AND POC)
A formal application is not required for students entering the four-year program. A student may enter the program by simply registering for one of the general military course (GMC) classes at the same time and in the same manner as other courses. GMC students receive two semester hours for each AES 100- and 200-level class completed for a total of
eight semester hours. GMC students not on AFROTC scholarship incur no military obligation. Each candidate for commissioning must pass an Air Force aptitude test and a physical examination and be selected by a board of Air Force officers. If selected, the student then enrolls in the POC the last two years of the AFROTC curriculum. Students attend a four-week field training course at an Air Force base normally between the sophomore and junior years. Upon successful completion of the POC and the college requirements for a degree, the student is commissioned in the U.S. Air Force as a second lieutenant. The new officer then enters active duty or may be granted an educational delay to pursue graduate work.

TWO-YEAR PROGRAM (POC)

The basic requirement for entry into the two-year program is that the student have two academic years of college work remaining, either at the undergraduate or graduate level. Applicants seeking enrollment in the two-year program must pass an Air Force aptitude test and medical examination and be selected by a board of Air Force officers. After successfully completing a six-week field training course at an Air Force base, the applicant may enroll in the professional officer course (POC) in the AFROTC program. Upon completion of the POC and the college requirements for a degree, the student is commissioned.

Note: This program is subject to change without notice.

Qualifications. The following requirements must be met for admittance to the POC:

1. The four-year student must successfully complete the general military course and the four-week field training course.
2. The two-year applicant must complete a six-week field training course.
3. All students must pass the Air Force Officer Qualifying Test (AFOQT).
4. All students must pass the Air Force physical examination.
5. All students must maintain the minimum GPA required by the college.
6. All students must meet the physical fitness requirements.

Pay and Allowances. POC members in their junior and senior years receive $350 and $400 respectively per month for a maximum of 20 months of POC attendance. Students are also paid to attend field training. In addition, uniforms, housing, and meals are provided during field training at no cost to the student. Students are reimbursed for travel to and from field training.

Scholarships. AFROTC offers scholarships annually to outstanding young men and women on a nationwide competitive basis. Scholarships can cover college tuition for nonresident students and provide an allowance for books, fees, supplies and equipment, and a monthly tax-free allowance of $250 to $400 depending on the year. Scholarships are available on a four-, three-, or two-year basis. To qualify for a four- or three-year scholarship, a student must be a U.S. citizen and submit an application before December 1 of the senior year in high school. Interested students should consult their high school counselors or contact AFROTC at ASU for application forms to be submitted to

HQ AFROTC
MAXWELL AFB
AL 36112-6663

Applications can also be submitted online at www.afrotc.com.

Students enrolled in AFROTC at ASU are eligible for a limited number of three- or two-year scholarships. Those students interested must apply through the Department of Aerospace Studies. Consideration is given to academic grades, the score achieved on the AFOQT, and physical fitness. A board of officers considers an applicant’s personality, character, and leadership potential.

AEROSPACE STUDIES (AES)

M AES 101 Air Force Today I. (2)
fall
Introduces U.S. Air Force and AFROTC. Topics include: the Air Force mission and organization, customs and courtesies, officer opportunities, officership, and professionalism.

M AES 102 Leadership Lab. (0)
fall
Emphasizes common Air Force customs and courtesies, drill and ceremonies, health and physical fitness through group participation. Corequisite: AES 101.

M AES 103 Air Force Today II. (2)
spring
Continuation of AES 101. Topics include: the Air Force mission and organization, customs and courtesies, officer opportunities, officership, and professionalism. Prerequisite: AES 101 or department approval.

M AES 104 Leadership Lab. (0)
spring
Continuation of AES 102 with more in-depth emphasis on learning the environment of an Air Force officer. Corequisite: AES 103.

M AES 201 The Evolution of USAF Air and Space Power I. (2)
fall
Further preparation of the AFROTC candidate. Topics include: Air Force heritage and leaders, communication skills, ethics, leadership, quality Air Force, and values. Prerequisite: AES 103 or department approval.

M AES 202 Leadership Lab. (0)
fall
Application of advanced drill and ceremonies, issuing commands, knowing flag etiquette, and developing, directing, and evaluating skills to lead others. Corequisite: AES 201.

M AES 203 The Evolution of USAF Air and Space Power II. (2)
spring
Continuation of AES 201. Topics include: the Air Force mission and organization, customs and courtesies, officer opportunities, officership, and professionalism. Prerequisite: AES 201 or department approval.

M AES 204 Leadership Lab. (0)
spring
Continuation of AES 202 with emphasis on preparation for field training. Corequisite: AES 203.

M AES 301 Air Force Leadership Studies I. (3)
fall
Study of communication skills, leadership and quality management fundamentals, leadership ethics, and professional knowledge required of an Air Force officer. Prerequisite: AES 203 or department approval. General Studies: L
AFRICAN AND AFRICAN AMERICAN STUDIES PROGRAM

M AES 302 Leadership Lab. (0)
fall
Advanced leadership experiences applying leadership and management principles to motivate and enhance the performance of other cadets. Corequisite: AES 301.

M AES 303 Air Force Leadership Studies II. (3)
spring
Continuation of AES 301. Topics include: communication skills, ethics, leadership, professional knowledge, and quality management required of an Air Force officer. Prerequisite: AES 203 or department approval. General Studies: L

M AES 304 Leadership Lab. (0)
spring
Continuation of AES 302 with emphasis on planning the military activities of the cadet corps and applying advanced leadership methods. Corequisite: AES 303.

M AES 401 National Security Affairs. (3)
fall
Examines advanced ethics, Air Force doctrine, national security process, and regional studies. Special topics include: civilian control of the military, military justice, and officership. Prerequisite: AES 303 or department approval. General Studies: L

M AES 402 Leadership Lab. (0)
fall
Advanced leadership experience demonstrating learned skills in planning and controlling the military activities of the corps. Corequisite: AES 401.

M AES 403 Preparation for Active Duty II. (3)
spring
Continuation of AES 401. Topics include: civilian control of the military, doctrine, ethics, military justice, the national security process, and officership. Prerequisite: AES 401 or department approval.

M AES 404 Leadership Lab. (0)
spring
Continuation of AES 402 with emphasis on preparation for transition from civilian to military life. Corequisite: AES 403.

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

The African and African American Studies program offers an interdisciplinary examination of the many ways in which African and African-descended peoples have created robust lives for themselves and, in turn, contributed to the creation of the modern world. The program’s mission

M AES 302 Leadership Lab. (0)
fall
Advanced leadership experiences applying leadership and management principles to motivate and enhance the performance of other cadets. Corequisite: AES 301.

M AES 303 Air Force Leadership Studies II. (3)
spring
Continuation of AES 301. Topics include: communication skills, ethics, leadership, professional knowledge, and quality management required of an Air Force officer. Prerequisite: AES 203 or department approval. General Studies: L

M AES 304 Leadership Lab. (0)
spring
Continuation of AES 302 with emphasis on planning the military activities of the cadet corps and applying advanced leadership methods. Corequisite: AES 303.

M AES 401 National Security Affairs. (3)
fall
Examines advanced ethics, Air Force doctrine, national security process, and regional studies. Special topics include: civilian control of the military, military justice, and officership. Prerequisite: AES 303 or department approval. General Studies: L

M AES 402 Leadership Lab. (0)
fall
Advanced leadership experience demonstrating learned skills in planning and controlling the military activities of the corps. Corequisite: AES 401.

M AES 403 Preparation for Active Duty II. (3)
spring
Continuation of AES 401. Topics include: civilian control of the military, doctrine, ethics, military justice, the national security process, and officership. Prerequisite: AES 401 or department approval.

M AES 404 Leadership Lab. (0)
spring
Continuation of AES 402 with emphasis on preparation for transition from civilian to military life. Corequisite: AES 403.

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

African and African American Studies Program
www.asu.edu/clas/aframstu
480/965-4399
COWDN 224

Mary Margaret Fonow, Interim Director
CORE FACULTY
Professors: Boulin Johnson, Reyes
Associate Professor: Bontemps
Assistant Professors: Hinds, Robillard, Usman
Clinical Associate Professor: Cox
Visiting Assistant Professor: Gallab

AFFILIATED FACULTY
Art
Professors: Sweeney, Young
Associate Professor: Umbberger
Asian Pacific American Studies
Assistant Professor: Rosa

Community Resources and Development
Associate Professor: Teye

English
Professors: Lester, Miller
Associate Professor: Fulton
Lecturer: Fuse

History
Associate Professors: Barnes, El Hamel
Assistant Professor: Whitaker

Human Communication
Professors: Jain, Martin
Associate Professors: Davey, Davis

Human Evolution and Social Change
Associate Professor: Winkelman

Journalism and Mass Communication
Associate Professor: Bramlett-Solomon

Justice and Social Inquiry
Professors: Jurik, Romero, Zatz
Assistant Professor: Quan

Languages and Literatures
Assistant Professors: Ali, McElroy

Music
Professors: Pilafian, Smith, Solís, Sunkett

Political Science
Professor: Iheduru
Associate Professor: Mitchell

Psychology in Education
Professor: Hood

Religious Studies
Associate Professors: Moore, Umar

Sociology
Professor: Cobas
Associate Professor: Keith
Instructor: Williams

Theatre and Film
Professor: Edwards

Women and Gender Studies
Professor: Rothschild
Associate Professor: Leong
Assistant Professor: Anderson

The African and African American Studies program offers an interdisciplinary examination of the many ways in which African and African-descended peoples have created robust lives for themselves and, in turn, contributed to the creation of the modern world. The program’s mission

is advanced by its core undergraduate curriculum and certificate and minor programs that examine the culture, arts, history, politics, economics, and current status of African Americans, Africans and the African Diaspora everywhere, especially in the Caribbean, Central America, and South America. The curriculum combines a research-based understanding of the humanities, social and behavioral sciences, and the arts with practical applications (internships, community/civic engagement, and research projects) to prepare students for lifelong learning, advanced study in a variety of fields, and successful careers and productive public service in an increasingly diverse society, especially in Arizona.

AFRICAN AND AFRICAN AMERICAN STUDIES—BA

Course Requirements. The major in African and African American Studies (AAAS) requires 45 semester hours of course work. A minimum of 30 semester hours must be AFH, AFR, and AFS courses. The remaining course work must be in a related field approved by an AAAS advisor. All students in the major are required to take the following 15 semester hours of core courses:

AFH 300 Precolonial Africa ..................................................3
AFS 200 Introduction to African and African Diaspora Studies...3
AFS 301 Race and Racism in Africa/African Diaspora..............3
AFS 312 Contemporary African and African Diaspora Women...3
AFS 484 Field Experience/Internship .....................................3
or AFS 498 Pro-Seminar (3)

Regional Emphasis Area. In addition to the 15-semester-hour core curriculum, students in the AAAS program may choose a 15-semester-hour regional emphasis area in Africa, Caribbean and Afro-Latin America, or African America. The courses that satisfy the requirements for each regional emphasis area are grouped thematically (History; Governance and Politics; Family, Health, Gender, and Society; and Culture and Literature) to provide students a variety of choices to satisfy their academic interests.

Africa Emphasis Area Requirements. Students who opt for the Africa regional emphasis area must take:

AFH 335 Survey of African Literatures ....................................3
or AFS 355 Democracy and Civil Society in Africa (3)
AFS 340 The Making of Modern Africa ..................................3
Related courses* ........................................................................3
Total ...............................................................................................15

Caribbean and Afro-Latin American Emphasis Area Requirements. Students who opt for the Caribbean and Afro-Latin America regional emphasis area must take:

AFH 318 African and African Diaspora Women Writers.........3
or AFR 319 Black Experience in Latin America (3)
AFS 345 The Making of the Caribbean Society .......................3
Related courses* ...........................................................................9
Total ...............................................................................................15

African America Emphasis Area Requirements. Students who opt for the African America regional emphasis area must take:

AFH 318 African and African Diaspora Women Writers.........3
or AFR 210 Introduction to African American Studies C(3)
AFS 363 African American History to 1865 SB, C, H ..........3
or AFS 364 African American History Since 1865 SB, C, H (3)
Related courses* ...........................................................................9
Total ...............................................................................................15

* Six semester hours of Caribbean and Afro-Latin American-related courses (i.e., 50 percent or more Caribbean and Afro-Latin American content) at the 300 level and three semester hours of courses at the 400 level are required. At least nine of the 15 semester hours in this emphasis area must be completed at ASU.

Thematic Emphasis Area. Students in the African and African American Studies program may also opt for a 15-semester-hour thematic emphasis area by taking the following courses:

AFH 305 The Global History of the Trans-Atlantic Slave Trade ..3
or AFS 415 Black Political Thought and the Limits of Liberal Democracy (3)
Related courses* ...........................................................................9
Total ...............................................................................................15

* Twelve semester hours of courses chosen from at least three thematic areas listed below; or from other African and African American Studies-related courses (i.e., 50 percent or more thematic content) at the 300 and 400 levels are required. At least nine of the 15 semester hours in this emphasis area must be completed at ASU.

History

AFH 300 Precolonial Africa ......................................................3
AFH 305 The Global History of the Trans-Atlantic Slave Trade ..3
AFH 319 Black Experience in Latin America .........................3
AFH 465 Harlem Renaissance: A Cultural History: 1877–1945 ..3
AFS 340 The Making of Modern Africa .................................3
AFS 345 The Making of the Caribbean Society .......................3
AFS 363 African American History to 1865 SB, C, H ..........3
AFS 364 African American History Since 1865 SB, G, H .......3
AFS 366 African Archaeology: Precolonial Urban Culture SB, C, H .................................................................3
AFS 466 Peoples and Cultures of Africa SB, G, H .................3

Governance and Politics

AFR 210 Introduction to African American Studies C .............3
AFS 200 Introduction to African and African Diaspora Studies..3
AFS 301 Race and Racism in Africa/African Diaspora ..........3
AFS 304 Islands of Globalization: Caribbean Political Economy .................................................................3
AFS 320 Africa: Politics, Environment, and Development .......3
AFRICAN AND AFRICAN AMERICAN STUDIES PROGRAM

AFS 327 Human Rights in Africa ..................................................3
AFS 355 Democracy and Civil Society in Africa .........................3

Culture and Literature
AFH 303 African and African American Art ................................3
AFH 318 African and African Diaspora Women Writers .............3
AFH 331 Studies in African American Women Writers of Pre-Harlem Renaissance .........................................................3
AFH 333 American Ethnic Literature L/HU, C (3) ......................3
AFH 335 Survey of African Literatures ..........................................3
AFH 353 African American Literature: Beginnings Through the Harlem Renaissance L/HU, C .............................................3
AFH 354 African American Literature: Harlem Renaissance to the Present .................................................................3
AFH 459 Studies in African American/Caribbean Literatures L....3

Gender, Family, and Society
AFR 375 Race, Gender, and Sport SB, C .....................................3
AFR 428 Critical Race Theory ..................................................3
AFR 460 Race, Gender, and Media C ........................................3
AFS 312 Contemporary African and African Diaspora Women ...3
AFS 360 Black Families in the Diaspora: U.S. and Caribbean ...3
AFS 370 Family, Ethnic, and Cultural Diversity SB, C ..............3

Of the remaining course work, 15 hours may be taken in related area courses (i.e., non-African and African American Studies programs prefixes with at least 50 percent African, Caribbean, and Afro-Latin American, or African American continent) in consultation with the AAAS advisor and/or director.

Students are expected to fulfill the college’s language requirement in African languages or any of the languages spoken by the African Diaspora, such as Arabic, French, Portuguese, and Spanish.

CERTIFICATE IN AFRICAN AND AFRICAN AMERICAN STUDIES

Course Requirements. The certificate requires 24 semester hours. Fifteen core hours must be taken from the following courses:

AFH 353 African American Literature: Beginnings Through the Harlem Renaissance L/HU, C .............................................3
or AFH 354 African American Literature: Harlem Renaissance to the Present L/HU, C (3)
AFR 210 Introduction to African American Studies C ...............3
AFR 429 African American Studies Theory and Methods ..........3
AFS 363 African American History to 1865 SB, C, H ................3
AFS 364 African American History Since 1865 SB, C, H ..........3

In addition, one course from each of the three concentrations (i.e., social and behavioral sciences, humanities/arts, politics and society) must be taken. These courses are in addition to the required core courses. Courses should be selected in consultation with the major advisor.

MINOR IN AFRICAN AND AFRICAN AMERICAN STUDIES

Course Requirements. The minor requires 18 semester hours. All African and African American Studies minors must take the following six core hours:

AFH 300 Precolonial Africa ......................................................3
AFS 200 Introduction to African and African Diaspora Studies ...3
Choose one of the following regional courses ...............................3
AFH 319 Black Experience in Latin America (3)

AFR 210 Introduction to African American Studies C (3)
AFS 340 The Making of Modern Africa (3)
AFS 355 Democracy and Civil Society in Africa (3)
Related courses* .........................................................................9
Total ............................................................................................18

* Nine semester hours are required, with one 300 or 400 level course from each of the following thematic areas: Culture and Literature; Politics and Governance; and Family, Gender, and Society. At least 50 percent of the course content (which may or may not be AFH or AFS) must deal with African peoples inside and outside the African continent. At least nine of the 15 semester hours in this certificate must be completed at ASU.

BIS CONCENTRATION

A concentration in African and African American studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

AFRICAN AND AFRICAN AMERICAN STUDIES

HUMANITIES (AFH)

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

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

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

M AFH 202 Art of Africa, Oceania, and the Americas. (3)
fall
spring
General Studies: HU, G, H

M AFH 300 Precolonial Africa. (3)
fall
Surveys social, economic, political, cultural, and economic institutions and civilizations of Africa before European colonialism. Lecture, discussion, films.

M AFH 303 African and African American Art. (3)
fall, spring, summer
Anthropological perspective of African and African American visual art traditions from the past to 1970. Lecture, discussion, video and slide films.

M AFH 305 The Global History of the Trans-Atlantic Slave Trade. (3)
selected semesters
Origins, development, abolition, and impact of Atlantic slave trade as a global economic enterprise and great human tragedy; slavery experience. Lecture, discussion, films.

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

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

AFRICAN AND AFRICAN AMERICAN STUDIES
SOCIAL SCIENCE (AFS)

M AFS 200 Introduction to African and African Diaspora Studies. (3)
fall and spring
Introduces the study of African and African-descended peoples; theory, themes, and perspectives. Lecture, discussion.

M AFS 202 Ethnic Relations in the United States. (3)
fall and spring
Examines contending perspectives on the state and civil society and democratic struggles using sub-Saharan Africa and case study. Lecture, discussion, films. Prerequisite: junior standing.

M AFS 360 Black Families in the Diaspora: U.S. and Caribbean. (3)
fall
Comparative study of historical and current themes in the structure and internal dynamics of African Diaspora families. Lecture, discussion, films.

M AFS 363 African American History to 1865. (3)
once a year
The African American in American history, thought, and culture from slavery to 1865. Cross-listed as HST 333. Credit is allowed for only AFS 363 or HST 333.

General Studies: SB, C, H

M AFS 364 African American History Since 1865. (3)
once a year
The African American in American history, thought, and culture from 1865 to the present. Cross-listed as HST 334. Credit is allowed for only AFS 364 or HST 334.

General Studies: SB, C, H

M AFS 366 African Archaeology: Precolumbian Urban Culture. (3)
fall and spring
Overview of African civilization from the last 10,000 years up to 1850 via archaeological, documentary, and oral data. Lecture, discussion. Cross-listed as ASB 366. Credit is allowed for only AFS 366 or ASB 366.

General Studies: SB, G, H

M AFS 370 Family, Ethnic, and Cultural Diversity. (3)
fall and spring
Integrative approach to understanding historical and current issues related to the structure and internal dynamics of diverse American families. Lecture, discussion. Cross-listed as FAS 370. Credit is allowed for only AFS 370 or FAS 370. Prerequisite: PGS 101 or SOC 101.

General Studies: SB, C

M AFS 415 Black Political Thought and the Limits of Liberal Democracy. (3)
selected semesters
Black political and social thought; conflict between liberal democratic ideals and structures of domination and exploration from African Diaspora perspectives. Lecture, discussion, films.

M AFS 466 Peoples and Cultures of Africa. (3)
fall and spring
Survey of African peoples and their cultures, external contact, and changes. Meets non-Western requirement. Lecture, discussion. Cross-listed as ASB 466. Credit is allowed for only AFS 466 or ASB 466.

General Studies: SB, G, H

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
The American Indian Studies Program is an academic discipline that emphasizes the political and cultural experience of the various American Indian Nations and peoples of the United States. Course work focuses on the cultures, arts, history, and contemporary experiences of the various American Indian nations. The curriculum also concentrates on the practical application for professional career development, preparation for advanced degree programs, and preparation for service to Indian governments and reservations. It emphasizes scholarly expertise in selected fields of study and its practical application to community service.

AMERICAN INDIAN STUDIES—BS

Students pursuing a BS degree in American Indian Studies gain a broad knowledge of American Indian nations and peoples, with particular emphasis on Southwest American Indian nations. The degree program offers courses that provide students with intellectual and practical knowledge pertaining to American Indian cultures, history, law, literature, language, art, and government.

Students are required to take 42 semester hours, including 24 hours of required courses and 18 hours in one of two areas of emphasis: (1) legal policy, community, and nation building; or (2) arts, languages, and cultures. Contact the program office for a current list of elective courses. Students must receive a minimum grade of “C” (2.00) in required and emphasis courses. The following courses are required for all students majoring in American Indian Studies:

- AIS 180 Introduction to American Indian Studies C ..........3
- AIS 280 American Indian Sovereignty and the Courts C ........3
- AIS 285 Federal Indian Policy ...........................................3
- AIS 370 American Indian Languages and Cultures ............3
- AIS 380 Contemporary Issues of American Indian Nations ....3
- AIS 394 ST: Basic Statistical Analysis* ..................................3
- AIS 420 American Indian Studies Research Methods L ..........3
- AIS 498 Pro-Seminar ..........................................................3

* Until American Indian Studies is able to offer its own course in statistical research methods, students must take JUS 302, or a comparable course, in consultation with an advisor.

To assure the breadth and depth of their education, all American Indian Studies undergraduates must complete the requirements of the university General Studies program and the College of Liberal Arts and Sciences. For descriptive information on university requirements, see “General Studies,” page 93, and “University Graduation Requirements,” page 89. For descriptive information on College of Liberal Arts and Sciences requirements, see “College Graduation Requirements,” page 503.
MINOR IN AMERICAN INDIAN STUDIES

The minor in American Indian Studies is designed for students interested in developing an understanding of American Indian issues and analyzing issues through critical inquiry. Fifteen semester hours are required, including AIS 180, 380, and 385 and six elective semester hours from the two areas of emphasis. No pass/fail or credit/noncredit course work may be applied to the minor. A minimum of nine hours must be in resident credit at the Tempe campus. Students must receive a minimum grade of “C” (2.00) for all courses in the minor and meet all course eligibility requirements.

CERTIFICATE IN AMERICAN INDIAN STUDIES

The certificate program recognizes the need for training American Indian and non-Indian students for employment and leadership roles in American Indian government, in state/federal agencies, in education programs, and in urban and Indian community programs.

To this end, the American Indian Studies Certificate program seeks to address the myriad of contemporary social, political, and economic problems and issues impacting American Indian people.

The program provides students with
1. useful knowledge pertaining to American Indian sovereignty, government, law, history, economic development, and culture;
2. practical experience in the form of an off-campus internship working in an American Indian government, a community program, an educational entity, an urban program, or a state/federal agency; and
3. educational skills so that graduates can pursue jobs with an American Indian focus.

A certificate in American Indian Studies requires the completion of 21 semester hours. A minimum of 12 hours must be upper division, and a minimum grade of “C” (2.00) or higher is required except for the AIS Internship course, which requires a passing “Y” grade.

AIS 180 Introduction to American Indian Studies C .................3
AIS 280 American Indian Sovereignty and the Courts C ..........3
AIS 380 Contemporary Issues of American Indian Nations .........3
AIS 484 Internship ....................................................................3
AIS 494 ST: Law, Policy, and American Indians ......................3
Emphasis courses* ....................................................................6

* Select courses from the two areas of emphasis; contact the program office for a current list.

For more information, call the director of the American Indian Studies Program at 480/965-3634.

BIS CONCENTRATION

A concentration in American Indian studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

AMERICAN INDIAN STUDIES (AIS)

M AIS 180 Introduction to American Indian Studies. (3) once a year
Introduction to the study of American Indian justice issues from an interdisciplinary perspective. Primary topics include sovereignty, law, and culture.
General Studies: C
M AIS 194 Special Topics. (1–4) fall and spring
M AIS 280 American Indian Sovereignty and the Courts. (3) fall
Examines the sovereign status of American Indians and legal relationships between the tribes and the U.S. government. Lecture, discussion.
General Studies: C
M AIS 285 Federal Indian Policy. (3) spring
Examines the sovereign status of American Indians and legal relationships between the tribes and the U.S. government. Lecture, discussion.
M AIS 294 Special Topics. (1–4) selected semesters
M AIS 370 American Indian Languages and Cultures. (3) fall
Emphasizes understanding of Indian language families and the relationship of oral traditions to culture. Prerequisite: AIS 180.
M AIS 380 Contemporary Issues of American Indian Nations. (3) spring
Survey of legal, socioeconomic, political, and educational state of contemporary reservation and urban Indians. Prerequisite: AIS 180.
M AIS 394 Special Topics. (1–4) fall and spring
Topics may include the following:
• American Indian World Views and Philosophies. (3)
• Basic Statistical Analysis. (3)
M AIS 420 American Indian Studies Research Methods. (3) fall
Survey of diverse research methods, including statistical, historical, interpretative, and narrative approaches. Prerequisite: AIS 180.
General Studies: L
M AIS 484 Internship. (1–12) selected semesters
Fee.
M AIS 494 Special Topics. (1–4) fall and spring
Topics may include the following:
• Law, Policy, and American Indians. (3)
M AIS 498 Pro-Seminar. (1–7) selected semesters
M AIS 499 Individualized Instruction. (1–3) selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
Asian Pacific American Studies Program

Karen J. Leong, Director

CORE FACULTY
Associate Professors: Leong, Li, Nakagawa
Assistant Professor: Rosa
Assistant Director and Advisor: Kuo

AFFILIATED FACULTY
Community Resources and Development
Professor: Yoshioka

English
Assistant Professor: Sadowski-Smith
Lecturer: Fuse

Global Studies
Assistant Professor: Wang

Human Communication
Associate Professor: Martinez

Human Evolution and Social Change
Professor: Eder

Justice and Social Inquiry
Professors: Romero, Jurik
Assistant Professor: Quan

Languages and Literatures
Associate Professor: Choi

Nursing
Assistant Professor: Chia-Chen Chen

Social and Behavioral Sciences (West campus)
Assistant Professor: Guevarra

Social Work
Professor: Segal
Associate Professor: Steiner
Assistant Professor: Kang

Sociology
Associate Professor: Menjivar

Women and Gender Studies
Associate Professor: Leong

PURPOSE
Asian Pacific American Studies is an interdisciplinary undergraduate program that addresses the historical and contemporary experiences of Asian Americans and Pacific Islanders, what they have contributed to our society, and the complexity of racial formations in the U.S.

The program is designed to help students of all ethnicities
1. to think critically, develop clear written arguments, and present their perspectives effectively;
2. to learn about Asian American and Pacific Islander experiences and communities in Arizona, nationally, and within a larger global context; and
3. to prepare students to participate in an increasingly diverse and global U.S. society.

The certificate program provides students with opportunities to think critically about interethnic cooperation and conflict in the formation of social institutions and communities. The program also encourages students to learn about local Asian American and Pacific Islander communities and organizations through research, courses, and community internships.

CERTIFICATE IN ASIAN PACIFIC AMERICAN STUDIES

Course Requirements. The certificate program requires 18 semester hours. Twelve core hours must be fulfilled by the following courses:

APA 200 Introduction to Asian Pacific American Studies HU/SB, C ........................................................... 3
APA 360 Asian Pacific American Experience HU/SB, C ............... 3
APA 450 Asian Pacific American Contemporary Issues SB, C .......................... 3
APA 484 Internship ................................................................. 3

or APA 494 ST: Asian Pacific American Communities (3)

The remaining six semester hours must be filled by courses from an approved list, including any additional courses with an APA prefix, as well as COM 263 and MCO 460.

Students must apply for the certificate program through the Asian Pacific American Studies Program office. For more information, call the program director at 480/965-9711.

BIS CONCENTRATION

A concentration in Asian Pacific American studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

ASIAN PACIFIC AMERICAN STUDIES (APA)

M APA 194 Special Topics. (1–4)
teach and spring
M APA 200 Introduction to Asian Pacific American Studies. (3)
teach and spring
Examines historical and contemporary issues facing Asian Americans and Pacific Islanders in the United States. Lecture, discussion. General Studies: HU/SB, C
M APA 210 Introduction to Ethnic Studies in the U.S. (3) fall and spring
Covers diversity of experiences and relations among racial and ethnic groups in the United States. Lecture, discussion. Cross-listed as AFS 210/CCS 210. Credit is allowed for only AFS 210 or APA 210 or CCS 210.
General Studies: C
M APA 294 Special Topics. (1–4) fall and spring
Open to all students. May be repeated for credit.
M APA 310 Asian Pacific American Arts and Cultures. (3) fall and spring
Explores Asian Pacific American cultural expression in art, literature, film, theatre, dance, and music. Lecture, discussion.
General Studies: HU, C
M APA 315 Asian Pacific American Literature. (3) fall
Explores the literary history, critical reception, and major theories in Asian Pacific American poetry, fiction, and prose. Lecture, discussion.
General Studies: HU, C
M APA 330 Asian Pacific American Genders and Sexualities. (3) spring
Explores gender and sexuality issues as they relate to Asian Pacific American experiences, including interracial relationships, stereotypes, feminism, queer theory. Lecture, discussion.
General Studies: SB, C
M APA 340 Asian Pacific Americans and Media. (3) fall
Analyzes social construction of Asian Pacific American media images and resistance to those images in various historical contexts. Lecture, discussion.
General Studies: HU, C
M APA 345 Asian Pacific Americans and Film. (3) spring
Examines representations of Asian Pacific Americans in narrative, popular, experimental, and documentary film. Lecture, discussion.
General Studies: C, H
M APA 360 Asian Pacific American Experience. (3) fall and spring
Historical and contemporary experiences of Asian Pacific American racial/ethnic groups in the United States. Lecture, discussion. Topics may include the following:
• Chinese American
• Filipina and Filipino American
• Japanese American
• Korean American
• Pacific Islander
• South Asian American
• Southeast Asian American
General Studies: HU/SB, C
M APA 394 Special Topics. (1–4) fall and spring
Open to all students. May be repeated for credit. Topics may include the following:
• Asian Pacific American Immigration Issues
• Asian Pacific American Legal History
• Asian Pacific American Women Issues and Identities
• Asian Pacific Americans and Politics
M APA 450 Asian Pacific American Contemporary Issues. (3) fall and spring
Focuses on issues shaping Asian Pacific American communities, including immigration, politics, education, health, family, gender, youth, interracial relations, and other contemporary topics. Lecture, discussion, Prerequisite: APA 200 or instructor approval.
General Studies: SB, C
M APA 484 Internship. (1–12) fall and spring
Fee.
M APA 494 Special Topics. (1–4) fall and spring
Open to all students. May be repeated for credit. Topics may include the following:
• Asian Pacific American Communities.

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

M APA 498 Pro-Seminar. (1–7) fall and spring
M APA 499 Individualized Instruction. (1–3) fall and spring
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

Robert E. Blankenship, Chair

Regents' Professors: Angell, Buseck, Pettit

Professors: Allen, Blankenship, Fromme, Fuchs, Glick, Gould, Gust, Holloway, Kovuvetakis, Lohr, A. Moore, T. Moore, Petuskey, Rose, Shock, Skibo, Steinme, Wang, Williams, Woodbury, Yarger

Associate Professors: Anbar, Bond-Robinson, Booksh, Francisco, Hayes, Richert, Wolf

Assistant Professors: Chaput, Chen, Ghirlanda, Hartnett, Häussermann, Herckes, Levitus, Matyushov, Seo, Wachter, Yan

Senior Lecturers: Bauer, Marks

Lecturers: Briggs, Leifer, Pruis

CHEMISTRY—BA

The BA degree in Chemistry consists of 46 semester hours. Required courses are as follows:

Choose between the course combinations below.......................... 8 or 9
CHM 113 General Chemistry I SQ (4)
CHM 115 General Chemistry with Qualitative Analysis SQ (5)
CHM 117 General Chemistry for Majors I SQ* (4)
CHM 118 General Chemistry for Majors II SQ* (4)
CHM 334 Organic Chemistry for Majors II* (3)
CHM 337 Organic Chemistry Laboratory for Majors II* (1)
CHM 338 Organic Chemistry Laboratory for Majors II* (1)

**CHEMISTRY—BS**

The program consists of 46 semester hours in chemistry and 20 hours of related courses outside the major. Required courses are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 113</td>
<td>General Chemistry I SQ (4)</td>
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<tr>
<td>CHM 116</td>
<td>General Chemistry II SQ (4)</td>
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<tr>
<td>CHM 117</td>
<td>General Chemistry for Majors I SQ* (4)</td>
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<tr>
<td>CHM 118</td>
<td>General Chemistry for Majors II SQ* (4)</td>
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<tr>
<td>CHM 233</td>
<td>General Organic Chemistry I (3)</td>
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<td>CHM 234</td>
<td>General Organic Chemistry II (3)</td>
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<td>CHM 235</td>
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<td>Instrumental Analysis (3)</td>
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<td>CHM 333</td>
<td>Organic Chemistry for Majors I* (3)</td>
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<td>CHM 337</td>
<td>Organic Chemistry Laboratory for Majors I* (1)</td>
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<td>CHM 338</td>
<td>Organic Chemistry Laboratory for Majors II* (1)</td>
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<td>CHM 341</td>
<td>Elementary Physical Chemistry (3)</td>
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<td>Inorganic Chemistry (3)</td>
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<td>CHM 349</td>
<td>Physical Chemistry Laboratory II SQ (1)</td>
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<td>CHM 370</td>
<td>Calculus with Analytic Geometry I MA ..............</td>
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<td>CHM 371</td>
<td>Calculus with Analytic Geometry II MA .............</td>
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<td>MAT 270</td>
<td>Calculus with Analytic Geometry I (MA)</td>
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<td>MAT 271</td>
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<td>PHY 111</td>
<td>General Physics SQ 1* (3)</td>
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<td>PHY 112</td>
<td>General Physics SQ 2* (3)</td>
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<tr>
<td>PHY 114</td>
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<tr>
<td>PHY 121</td>
<td>University Physics I: Mechanics SQ 1*</td>
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<td>PHY 122</td>
<td>University Physics Laboratory I SQ* (1)</td>
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<tr>
<td>PHY 131</td>
<td>University Physics II: Electricity and Magnetism SQ 2* (1)</td>
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<td>PHY 132</td>
<td>University Physics Laboratory II SQ 2* (1)</td>
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<td>CHM 234</td>
<td>General Organic Chemistry II (3)</td>
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<td>CHM 338</td>
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<td>CHM 460</td>
<td>Biological Chemistry (3)</td>
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<td>CHM 461</td>
<td>Biochemistry (3)</td>
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<td>CHM 471</td>
<td>Solid-State Chemistry (3)</td>
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<td>CHM 481</td>
<td>Geochemistry (3)</td>
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<td>CHM 485</td>
<td>Meteorites and Cosmochemistry (3)</td>
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<tr>
<td>CHM 489</td>
<td>Earthquake Physics (3)</td>
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</tbody>
</table>

**Total .................................................................16 or 17**

* CHM 117, 118, 333, 334, 337, and 338 are strongly recommended for qualified students.

**Environmental Chemistry Concentration**

The program consists of a minimum of 40 semester hours in chemistry or biochemistry and 26 hours of related courses. Required courses are as follows:

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<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>CHM 113</td>
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<tr>
<td>CHM 115</td>
<td>General Chemistry with Qualitative Analysis SQ  (5)</td>
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<td>CHM 310</td>
<td>General Chemistry Laboratory (1)</td>
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<td>CHM 326</td>
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<td>Organic Chemistry Laboratory (1)</td>
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<td>CHM 345</td>
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<td>Physical Chemistry II .................................</td>
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<td>CHM 358</td>
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</tr>
<tr>
<td>CHM 359</td>
<td>General Chemistry Laboratory (1)</td>
<td></td>
</tr>
<tr>
<td>CHM 360</td>
<td>Analytical Chemistry Laboratory (1)</td>
<td></td>
</tr>
<tr>
<td>CHM 361</td>
<td>General Chemistry with Qualitative Analysis SQ  (5)</td>
<td></td>
</tr>
</tbody>
</table>

**Total .................................................................17**

* CHM 117, 118, 333, 334, 337, and 338 are strongly recommended for qualified students.
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

Additional required chemistry and biochemistry courses are as follows:

CHM 240 Introduction to Physical Chemistry CS\textsuperscript{1} 3
CHM 302 Environmental Chemistry 3
CHM 303 Environmental Chemistry Laboratory L\textsuperscript{1} 2
CHM 327 Instrumental Analysis 3
CHM 328 Instrumental Analysis Laboratory 2
CHM 345 Physical Chemistry I 3
CHM 348 Physical Chemistry Laboratory I L\textsuperscript{1} 1
CHM 460 Biological Chemistry 3
CHM 481 Geochemistry 3

Total ........................................... 23

* CHM 303 or both CHM 349 and 452 must also be taken with CHM 348 to secure L credit.

Additional required related field courses are as follows:

GLG 321 Mineralogy 3
MAT 270 Calculus with Analytic Geometry I MA\textsuperscript{2} 4
MAT 271 Calculus with Analytic Geometry II MA\textsuperscript{2} 4
MAT 272 Calculus with Analytic Geometry III MA\textsuperscript{2} 4
PHY 121 University Physics I: Mechanics SQ\textsuperscript{1} 3
PHY 122 University Physics Laboratory I SQ\textsuperscript{1} 1
PHY 131 University Physics II: Electricity and Magnetism SQ\textsuperscript{1} 3
PHY 132 University Physics Laboratory II SQ\textsuperscript{1} 1

Related field elective (choose from the courses below)\textsuperscript{3} 3–4

BIO 320 Fundamentals of Ecology (3)
BIO 426 Limnology L (4)
GLG 461 Geomicrobiology (3)

Total ........................................... 26 or 27

\textsuperscript{1} Both PHY 121 and 122 must be taken to secure SQ credit.
\textsuperscript{2} Both PHY 131 and 132 must be taken to secure SQ credit.

American Chemical Society Certification. A student who satisfactorily completes the BS in Chemistry program is certified by the Department of Chemistry and Biochemistry to the American Chemical Society (ACS) as having met the specific requirements for undergraduate professional training in chemistry. Graduates meeting ACS guidelines can receive a certificate to indicate this fact.

BIOCHEMISTRY—BA

The program consists of a minimum of 38 semester hours in chemistry and biochemistry and 18 semester hours of related courses. Required courses are as follows:

Choose between the course combinations below\textsuperscript{4} 8 or 9
CHM 113 General Chemistry I SQ (4)
CHM 115 General Chemistry with Qualitative Analysis SQ (5)

CHM 113 General Chemistry I SQ (4)
CHM 116 General Chemistry II SQ (4)

CHM 117 General Chemistry for Majors I SQ\textsuperscript{*} (4)
CHM 118 General Chemistry for Majors II SQ\textsuperscript{*} (4)

Choose between the course combinations below\textsuperscript{4} 8
CHM 333 Organic Chemistry for Majors I\textsuperscript{\textsuperscript{a}} (3)
CHM 334 Organic Chemistry for Majors II\textsuperscript{\textsuperscript{a}} (3)
CHM 337 Organic Chemistry Laboratory for Majors I\textsuperscript{\textsuperscript{a}} (1)
CHM 338 Organic Chemistry Laboratory for Majors II\textsuperscript{\textsuperscript{a}} (1)

CHM 233 General Organic Chemistry I (3)
CHM 234 General Organic Chemistry II (3)
CHM 237 General Organic Chemistry Laboratory I (1)
CHM 238 General Organic Chemistry Laboratory II (1)

Total ...............................................................................................16 or 17

* CHM 117, 118, 333, 334, 337, and 338 are strongly recommended for qualified students.

Additional required chemistry and biochemistry courses are as follows:

BCH 461 General Biochemistry 3
BCH 462 General Biochemistry 3
BCH 467 Analytical Biochemistry Laboratory L 3
CHM 302 Environmental Chemistry 3
CHM 325 Analytical Chemistry (3)
CHM 341 Elementary Physical Chemistry\textsuperscript{\textsuperscript{a}} 3

Chemistry electives (choose from the courses below)\textsuperscript{5} 6
BCH 392 Introduction to Research Techniques (1–3)
BCH 463 Biophysical Chemistry (3)
BCH 464 Biophysical Chemistry Laboratory (2)
BCH 465 Protein and Nucleic Acid Biochemistry (3)
CHM 302 Environmental Chemistry (3)
CHM 325 Analytical Chemistry (3)
CHM 326 Analytical Chemistry Laboratory (1)
CHM 327 Instrumental Analysis (3)
CHM 328 Instrumental Analysis Laboratory (2)
CHM 392 Introduction to Research Techniques (1–3)
CHM 424 Separation Science (3)
CHM 452 Inorganic Chemistry Laboratory L\textsuperscript{2} (1–2)
CHM 453 Inorganic Chemistry (3)
CHM 471 Solid-State Chemistry (3)
CHM 481 Geochemistry (3)

Total ............................................................................................... 21

\textsuperscript{1} CHM 345 may be taken in place of CHM 341.
\textsuperscript{2} Both CHM 348 and 349 must also be taken with CHM 452 to secure L credit.

Additional required related field courses are as follows:

Choose from the course combinations below\textsuperscript{4} 11 or 12

BIO 187 General Biology I SG (4)
BIO 188 General Biology II SQ (4)
BIO 340 General Genetics (4)

BIO 187 General Biology I SG (4)
BIO 188 General Biology II SQ (4)
BIO 353 Cell Biology (3)

MBB 245 Cellular and Molecular Biology SQ (4)
MBB 343 Genetic Engineering and Society L (4)
MBB 350 Applied Genetics (4)

Choose between the course combinations below\textsuperscript{6} 7
MAT 251 Calculus for Life Sciences MA\textsuperscript{\textsuperscript{a}} (3)
PHY 101 Introduction to Physics SQ\textsuperscript{\textsuperscript{a}} (4)

MAT 210 Brief Calculus MA\textsuperscript{\textsuperscript{a}} (3)

\textsuperscript{L} literacy and critical inquiry / \textsuperscript{MA} mathematics / \textsuperscript{CS} computer/statistics/quantitative applications / \textsuperscript{HU} humanities and fine arts / \textsuperscript{SB} social and behavioral sciences / \textsuperscript{SG} natural science—general core courses / \textsuperscript{SQ} natural science—quantitative / \textsuperscript{C} cultural diversity in the United States / \textsuperscript{G} global / \textsuperscript{H} historical / See “General Studies,” page 90.
COLEGE OF LIBERAL ARTS AND SCIENCES

PHY 101 Introduction to Physics SQ\(^2\) (4)

Total ......................................................... 16 or 17

\(^1\) MAT 270 may be taken in place of MAT 210 or 251.

\(^2\) The combination of PHY 111, 112, 113, and 114 may be taken in place of PHY 101.

BIOCHEMISTRY—BS

The program consists of 36 semester hours in chemistry and biochemistry and 31 semester hours of related courses. Required courses are as follows:

Choose between the course combinations below................. 8 or 9
CHM 113 General Chemistry I SQ (4)

CHM 115 General Chemistry with Qualitative Analysis SQ (5)

CHM 116 General Chemistry II SQ (4)

CHM 117 General Chemistry for Majors I SQ\(^a\) (4)

CHM 118 General Chemistry for Majors II SQ\(^a\) (4)

CHM 333 Organic Chemistry for Majors I\(^a\) (3)

CHM 334 Organic Chemistry for Majors II\(^a\) (3)

CHM 337 Organic Chemistry Laboratory for Majors I\(^a\) (1)

CHM 338 Organic Chemistry Laboratory for Majors II\(^a\) (1)

CHM 233 General Organic Chemistry I (3)

CHM 234 General Organic Chemistry II (3)

CHM 236 General Organic Chemistry Laboratory I (1)

CHM 238 General Organic Chemistry Laboratory II (1)

Total ........................................................................ 18 or 19

* CHM 117, 118, 333, 334, 337, and 338 are strongly recommended for qualified students.

Additional required chemistry and biochemistry courses are as follows:

BCH 461 General Biochemistry .............................................. 3
BCH 462 General Biochemistry .............................................. 3
BCH 463 Biophysical Chemistry ........................................... 3
BCH 464 Biophysical Chemistry Laboratory ...................... 2
BCH 467 Analytical Biochemistry Laboratory L .................... 3

Chemistry elective (choose from the courses below) ............ 3

BCH 392 Introduction to Research Techniques (1–3)

BCH 465 Protein and Nucleic Acid Biochemistry (3)

CHM 325 Analytical Chemistry (3)

CHM 327 Instrumental Analysis (3)

CHM 424 Separation Science (3)

CHM 431 Qualitative Organic Analysis (3)

CHM 433 Inorganic Chemistry (3)

CHM 471 Solid-State Chemistry (3)

CHM 481 Geochemistry (3)

CHM 485 Meteorites and Cosmochemistry (3)

Total ........................................................................ 20

* CHM 345 may be taken in place of CHM 341.

Additional required related field courses are as follows:

BIO 187 General Biology I SQ .............................................. 4
BIO 188 General Biology II SQ ............................................. 4
BIO 340 General Genetics .................................................. 4

BIO 353 Cell Biology .......................................................... 3
MAT 270 Calculus with Analytic Geometry I MA ................. 4
MAT 271 Calculus with Analytic Geometry II MA ............... 4
PHY 111 General Physics SQ\(^1\) .............................................. 3
PHY 112 General Physics SQ\(^2\) .............................................. 3
PHY 113 General Physics Laboratory SQ\(^1\) ......................... 1
PHY 114 General Physics Laboratory SQ\(^2\) ......................... 1

Total ................................................................................ 31

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

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

Additional biochemistry and chemistry courses, including CHM 392 Introduction to Research Techniques, may be taken by students and should be chosen in consultation with an advisor.

BIOCHEMISTRY—BS

Medicinal Chemistry Concentration

The program consists of a minimum of 41 semester hours in chemistry or biochemistry and 26 hours of related courses. Required courses are as follows:

Choose between the course combinations below................. 8 or 9

CHM 113 General Chemistry I SQ (4)

CHM 115 General Chemistry with Qualitative Analysis SQ (5)

CHM 116 General Chemistry II SQ (4)

CHM 117 General Chemistry for Majors I SQ\(^a\) (4)

CHM 118 General Chemistry for Majors II SQ\(^a\) (4)

Choose between the combinations of courses below............. 8

CHM 333 Organic Chemistry for Majors I\(^a\) (3)

CHM 334 Organic Chemistry for Majors II\(^a\) (3)

CHM 337 Organic Chemistry Laboratory for Majors I\(^a\) (1)

CHM 338 Organic Chemistry Laboratory for Majors II\(^a\) (1)

CHM 233 General Organic Chemistry I (3)

CHM 234 General Organic Chemistry II (3)

CHM 236 General Organic Chemistry Laboratory I (1)

CHM 238 General Organic Chemistry Laboratory II (1)

Total ........................................................................ 16 or 17

* CHM 117, 118, 333, 334, 337, and 338 are strongly recommended for qualified students.

Additional required chemistry and biochemistry courses are as follows:

BCH 461 General Biochemistry .............................................. 3
BCH 462 General Biochemistry .............................................. 3
BCH 463 Biophysical Chemistry ........................................... 3
BCH 464 Biophysical Chemistry Laboratory ...................... 2
BCH 467 Analytical Biochemistry Laboratory L .................... 3

Chemistry elective (choose from the courses below) ............ 3

BCH 392 Introduction to Research Techniques (1–3)

BCH 465 Protein and Nucleic Acid Biochemistry (3)

CHM 325 Analytical Chemistry (3)

CHM 327 Instrumental Analysis (3)

CHM 424 Separation Science (3)

CHM 431 Qualitative Organic Analysis (3)

CHM 433 Inorganic Chemistry (3)

CHM 471 Solid-State Chemistry (3)

CHM 481 Geochemistry (3)

CHM 485 Meteorites and Cosmochemistry (3)

CHM 341 Elementary Physical Chemistry ......................... 3

CHM 343 Physical Chemistry Laboratory ......................... 1

CHM 433 Advanced Organic Chemistry I ......................... 3

CHM 435 Medicinal Chemistry ........................................... 3

Chemistry or biochemistry elective (choose from the courses below) ................................................................. 3

BCH 465 Protein and Nucleic Acid Biochemistry (3)

CHM 434 Advanced Organic Chemistry II (3)
CHM 453 Inorganic Chemistry (3)
Total .................................................................25

Additional required related field courses are as follows:

Choose between the course combinations below

<table>
<thead>
<tr>
<th>CHM 231</th>
<th>Elementary Organic Chemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 233</td>
<td>General Organic Chemistry I (3)</td>
</tr>
</tbody>
</table>

BCH 367 Elementary Biochemistry Laboratory (1)

BCH 361 Principles of Biochemistry (3)

CHM 333 Organic Chemistry for Majors I 1 (3)

CHM 334 Organic Chemistry for Majors II 1 (3)

CHM 337 Organic Chemistry Laboratory for Majors I 1 (1)

CHM 338 Organic Chemistry Laboratory for Majors II 1 (1)

CHM 341Elementary Physical Chemistry 2 .........................................................3

Choose between the combinations of courses below

| CHM 345 Physical Chemistry I (3) |
| CHM 346 Physical Chemistry II (3) |
| CHM 348 Physical Chemistry Laboratory I (1) |
| CHM 349 Physical Chemistry Laboratory II (1) |

Minimum total .................................................................25

1. Equivalent courses may be taken in place of CHM 113, 115, or 116.
2. Both CHM 231 and 235 must be taken to secure SQ credit.

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

MINOR IN BIOCHEMISTRY

A minor in Biochemistry is awarded to students who complete the following required courses:

| BCH 461 General Biochemistry ....................................3 |
| BCH 462 General Biochemistry ....................................3 |
| CHM 113 General Chemistry I SQ (4) |
| CHM 115 General Chemistry with Qualitative Analysis SQ (5) |
| CHM 117 General Chemistry for Majors I SQ 3 (4) |
| CHM 118 General Chemistry for Majors II SQ 3 (4) |

Choose between the combinations of courses below

| CHM 341Elementary Physical Chemistry 2 .........................................................3 |

Minimum total .................................................................24 or 25

1. CHM 117, 118, 333, 334, 337, and 338 are strongly recommended for qualified students.
2. CHM 345 may be taken in place of CHM 341.

BIS CONCENTRATION

A concentration in chemistry is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

SECONDARY EDUCATION—BAE

Chemistry. This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education have an advisor in the College of Education and an advisor within the department of their academic specialization area.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.
Academic Specialization ITC Admission Requirements. The following courses must be completed with a “C” (2.00) or higher before applying to the ITC program: CHM 113, 116, 233, and 237. The following courses may be in progress when applying to the ITC program but must be completed with a “C” (2.00) or higher before starting the program: CHM 234 and 238.

The academic specialization requires 46 semester hours. Required courses are as follows:

CHM 113 General Chemistry I SQ…………………………..4
CHM 116 General Chemistry II SQ……………………..4
CHM 233 General Organic Chemistry I……………………3
CHM 234 General Organic Chemistry II……………………3
CHM 237 General Organic Chemistry Laboratory I………………1
CHM 238 General Organic Chemistry Laboratory II……………..1
CHM 325 Analytical Chemistry........................................3
CHM 326 Analytical Chemistry Laboratory..........................1
CHM 341 Elementary Physical Chemistry……………………..3–6 or CHM 345 Physical Chemistry I (3) and CHM 346 Physical Chemistry II (3)
CHM 453 Inorganic Chemistry……………………………………3
Choose two of the courses below............................................6
  BCH 361 Principles of Biochemistry (3)
  CHM 302 Environmental Chemistry (3)
  CHM 453 Inorganic Chemistry (3)
Total .................................................................................32–35

Additional required related field courses are as follows:

MAT 270 Calculus with Analytic Geometry I MA………………….4
MAT 271 Calculus with Analytic Geometry II MA………………….4
PHY 111 General Physics SQ*…………………………….4
PHY 112 General Physics SQ*………………………….3
PHY 113 General Physics Laboratory SQ*…………………..1
PHY 114 General Physics Laboratory SQ*…………………..1
Total ..................................................................................16

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

Teaching Methods
CHM 480 Methods of Teaching Chemistry……………………..3
SED 494 ST: Methods of Teaching Science……………………3

GRADUATE PROGRAMS

The faculty in the Department of Chemistry and Biochemistry offer programs leading to the degrees of Master of Natural Science, MS, and PhD. See the Graduate Catalog for requirements.

The department participates in the interdisciplinary program for the MS and PhD degrees in Molecular and Cellular Biology. For more information, visit the program office in LSE 411, or call 480/965-1768.

BIOCHEMISTRY (BCH)

M BCH 361 Principles of Biochemistry. (3) fall, spring, summer
Structures, properties, and functions of proteins, enzymes, nucleic acids, carbohydrates, and lipids; the utilization and synthesis of these materials by living systems, and the relationship of these processes to energy production and utilization. Credit is allowed for only BCH 361 or 461. Prerequisite: CHM 231. Pre- or corequisite: CHM 234 or 334.

M BCH 367 Elementary Biochemistry Laboratory. (1) fall, spring, summer
Qualitative/quantitative analyses of constituents of biological systems, enzyme activity measurements and metabolic studies. 1 hour conference, 3 hours lab. Pre- or corequisite: BCH 361 or instructor approval.

M BCH 392 Introduction to Research Techniques. (1–3) fall, spring, summer
Instrumental methods and philosophy of research by actual participation in chemical research projects. May be repeated for total of 6 semester hours. Prerequisite: advisor and research supervisor approval.

M BCH 461 General Biochemistry. (3) fall and spring
Structure, chemistry, and metabolism of biomolecules and their role in the biochemical processes of living organisms. Credit is allowed for only BCH 461 or 361. Prerequisite: CHM 234 or 334. Corequisite: CHM 341 or 346.

M BCH 462 General Biochemistry. (3) fall and spring
Continuation of BCH 461. Prerequisite: BCH 461 or instructor approval.

M BCH 463 Biophysical Chemistry. (3) spring
Principles of physical chemistry as applied to biological systems. Prerequisite: CHM 341 or 346.

M BCH 464 Biophysical Chemistry Laboratory. (2) fall and spring
Introduces physical methods in modern biochemistry. Pre- or corequisite: BCH 463.

M BCH 465 Protein and Nucleic Acid Biochemistry. (3) spring
Structure and function of proteins and nucleic acids, including protein folding, enzymology, proteomics, DNA/RNA structure, replication, transcription, and genomics. Prerequisite: BCH 462 or instructor approval.

M BCH 467 Analytical Biochemistry Laboratory. (3) fall and spring
Quantitative analysis, separation and purification of biological molecules. Applies chemical and physical methods to the characterization of biological macromolecules. 1 conference, 1 hour lecture, 5 hours lab. Prerequisite: BCH 461. Corequisite: BCH 462.

M BCH 492 Introduction to Research Techniques. (1–3) selected semesters

M BCH 494 Special Topics. (1–4) selected semesters
Various topics.

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

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the Graduate Catalog, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M CHM 101 Introductory Chemistry. (4) fall, spring, summer
Elements of general chemistry. Adapted to the needs of students in nursing and kinesiology and those preparing for general chemistry. Recommended for General Studies credit. Normally followed by CHM 231. Cannot be used for major credit in chemical or biochemical sciences. Credit is allowed for only CHM 101 or 107. 3 hours lecture, 1 hour discussion, 2 hours lab. Fee. General Studies: SQ
M CHM 107 Chemistry and Society. (4)
fall and spring
General chemical principles and concepts presented in context of social and technological issues, e.g., energy, pollution, global warming, and others. Recommended for General Studies credit. Cannot be used for major credit in chemical or biochemical sciences. Credit is allowed for only CHM 107 or 101. 3 hours lecture, 1 hour discussion, 2 hours lab. Fee.
General Studies: SQ, G

M CHM 113 General Chemistry I. (4)
fall, spring, summer
Principles of chemistry. Adapted to the needs of students in the physical, biological, and earth sciences. Credit is allowed for only CHM 113 or 117. 3 hours lecture, 1 hour discussion, 2 hours lab. Fee. Prerequisite: MAT 106 (or 3 semesters of high school algebra); 1 year of high school chemistry recommended.
General Studies: SQ

M CHM 114 General Chemistry for Engineers. (4)
fall and spring
Chemical principles with emphasis toward engineering. Students without high school chemistry or chemical engineering majors must enroll in the CHM 113, 116 sequence instead of CHM 114. 3 hours lecture, 1 hour discussion, 2 hours lab. Fee. Prerequisite: CHM 113 or 2 years of high school chemistry. General Studies: SQ

M CHM 115 General Chemistry with Qualitative Analysis. (5)
fall, spring, summer
Continuation of CHM 113. Equilibrium theory, thermodynamics, kinetics, electrochemistry, nuclear chemistry, descriptive chemistry. Lab includes qualitative analysis. Credit is allowed for only CHM 115 or 116 or 118. 3 hours lecture, 2 hours discussion, 4 hours lab. Fee. Prerequisite: CHM 113 or 2 years of high school chemistry. General Studies: SQ

M CHM 116 General Chemistry II. (4)
fall and spring
Continuation of CHM 113. Equilibrium theory, thermodynamics, kinetics, electrochemistry, nuclear chemistry, descriptive chemistry. Credit is allowed for only CHM 116 or 115 or 118. 3 hours lecture, 1 hour discussion, 2 hours lab. Fee. Prerequisite: CHM 113 or 2 years of high school chemistry. General Studies: SQ

M CHM 117 General Chemistry for Majors I. (4)
fall
Atomic and molecular structure, properties and physical states of matter, chemical analysis, bonding, stoichiometry. Credit is allowed for only CHM 117 or 113. 3 hours lecture, 1 conference, 2 hours lab. Fee. Prerequisites: 3 years of high school mathematics; minimum of 1 year of high school physics. Prerequisite with a grade of “B” (3.00) or higher: minimum of 1 year of high school chemistry. General Studies: SQ

M CHM 118 General Chemistry for Majors II. (4)
spring
Atomic and molecular structure, properties and physical states of matter, chemical analysis, bonding, stoichiometry. Credit is allowed for only CHM 118 or 115 or 116. 3 hours lecture, 1 conference, 2 hours lab. Fee. Prerequisite: CHM 117. Corequisite: MAT 270. General Studies: SQ

M CHM 231 Elementary Organic Chemistry. (3)
fall, spring, summer
Surveys organic chemistry, with emphasis on the reactivity of basic functional groups. Credit is allowed for only CHM 231 or 233 or 333. Prerequisite with a grade of “B” (3.00) or higher: CHM 101 or 114 or 115 or 116 or 117 or 1 year of high school chemistry or instructor approval. General Studies: SQ (if credit also earned in CHM 235)

M CHM 233 General Organic Chemistry I. (3)
fall, spring, summer
Chemistry of organic compounds. Credit is allowed for only CHM 233 or 231 or 333. Prerequisite: CHM 115 or 116 or 118.

M CHM 234 General Organic Chemistry II. (3)
fall and spring or summer
Continuation of CHM 233. Credit is allowed for only CHM 234 or 334. Prerequisite: CHM 233.

M CHM 235 Elementary Organic Chemistry Laboratory. (1)
fall, spring, summer
Organic chemistry experiments in synthesis, purification, analysis, and identification. Lab. Fee. Pre- or corequisite: CHM 231. General Studies: SQ (if credit also earned in CHM 231)

M CHM 237 General Organic Chemistry Laboratory I. (1)
fall, spring, summer
Microscale organic chemical experiments in separation techniques, synthesis, analysis and identification, and relative reactivity. Credit is allowed for only CHM 237 or 337. 4 hours lab. Fee. Corequisite: CHM 233.

M CHM 238 General Organic Chemistry Laboratory II. (1)
fall and spring or summer
Continuation of CHM 237. Credit is allowed for only CHM 238 or 338. 4 hours lab. Fee. Prerequisite: CHM 237. Corequisite: CHM 234.

M CHM 240 Introduction to Physical Chemistry. (3)
spring
Introduces mathematical/computational methods in chemical kinetics, thermodynamics, quantum chemistry. Mathematical-based computer laboratory. 2 hours lecture, 4 hours lab. Fee. Prerequisite with a grade of “C” (2.00) or higher: MAT 272. General Studies: CS

M CHM 302 Environmental Chemistry. (3)
spring
Explores major environmental issues, problems, and solutions from analytical and chemistry perspectives. Prerequisites: CHM 114 (or 115 or 116 or 118), 231 (or 233).

M CHM 303 Environmental Chemistry Laboratory. (2)
spring
Lab in environmental chemistry to complement CHM 302. First-hand experience with sampling methods, analytical techniques, and environmental lab methods. Lab. Fee. Prerequisite: CHM 231 or 233. Pre- or corequisite: CHM 302. General Studies: L (if credit also earned in CHM 348)

M CHM 325 Analytical Chemistry. (3)
fall and spring
Principles and methods of chemical analysis. Prerequisite: CHM 115 or 116.

M CHM 326 Analytical Chemistry Laboratory. (1)
fall
Experiments in chemical analysis. 4 hours lab. Fee. Corequisite: CHM 325.

M CHM 327 Instrumental Analysis. (3)
spring
Principles of instrumental methods in chemical analysis. Electroanalytical and optical techniques. Prerequisites: CHM 325, 326. Pre- or corequisite: CHM 346.

M CHM 328 Instrumental Analysis Laboratory. (2)
spring
Experiments in chemical analysis by electroanalytical and optical techniques. 6 hours lab. Fee. Corequisite: CHM 327.

M CHM 333 Organic Chemistry for Majors I. (3)
fall
Structures, reaction mechanisms and kinetics, and systematic syntheses of organic compounds. Credit is allowed for only CHM 333 or 231 or 233. Prerequisite: CHM 115 or 118. Corequisite: CHM 337.

M CHM 334 Organic Chemistry for Majors II. (3)
spring
Continuation of CHM 333. Credit is allowed for only CHM 334 or 234. Prerequisite: CHM 333. Corequisite: CHM 338.

M CHM 337 Organic Chemistry Laboratory for Majors I. (1)
fall
Emphasizes mechanisms, kinetics, and products of organic reactions. Credit is allowed for only CHM 337 or 237. 1 conference, 3 hours lab. Fee. Pre- or corequisite: CHM 333.

M CHM 338 Organic Chemistry Laboratory for Majors II. (1) spring
Continuation of CHM 337. Credit is allowed for only CHM 338 or 238.
1 conference, 3 hours lab. Fee. Prerequisite: CHM 337. Corequisite:
CHM 334.
M CHM 341 Elementary Physical Chemistry. (3) fall
Thermodynamics, equilibrium, states of matter, solutions, and
chemical kinetics. For students in premedical, biological, and
educational curricula. Prerequisites: CHM 115 (or 114 or 118 or 325),
231 (or 233); MAT 271; PHY 112.
M CHM 343 Physical Chemistry Laboratory. (1) fall
Physical chemistry experiments. Credit is allowed for only CHM 343 or
both CHM 348 and 349. 1 hour conference, 3 hours lab. Fee.
Corequisite: CHM 341 or 345.
M CHM 345 Physical Chemistry I. (3) spring
Introduces quantum chemistry with application to electronic structure
and dynamics of atoms and molecules. Prerequisite: only CHM 240 or
both MAT 272 and 274 (with grades of “C” (2.00) or higher).
M CHM 346 Physical Chemistry II. (3) fall
Introduces equilibrium and statistical thermodynamics. Laws of
thermodynamics, equations of state, multicomponent chemical and
phase equilibria, and electrochemistry. Prerequisite: CHM 345.
Corequisite: MAT 274.
M CHM 348 Physical Chemistry Laboratory I. (1) fall
Laboratory experiments in spectroscopy and computational chemistry.
Credit is allowed for both CHM 348 and 349 or only CHM 343, 4 hours
lab. Fee. Pre- or corequisite: CHM 345.
General Studies: L (if credit also earned in only CHM 303 or both
CHM 349 and 452)
M CHM 349 Physical Chemistry Laboratory II. (1) spring
Laboratory experiments in thermodynamics, electrochemistry, and
computational chemistry. Credit is allowed for both CHM 349 and 348
or only CHM 343, 4 hours lab. Fee. Pre- or corequisite: CHM 346.
General Studies: L (if credit also earned in CHM 348 and 452)
M CHM 392 Introduction to Research Techniques. (1–3) fall, spring, summer
Instrumental methods and philosophy of research by actual participation in
chemical research projects. May be repeated for a total of 6 semester hours.
Prerequisite: approval of advisor and research supervisor.
M CHM 424 Separation Science. (3) selected semesters
Basic theory and practical aspects of gas, liquid, ion-exchange, and
gel-permeation chromatographies, and other important industrial and
research techniques, 2 hours lecture, 4 hours lab. Fee. Prerequisite:
CHM 234 or 334 or 346 or instructor approval.
M CHM 433 Advanced Organic Chemistry I. (3) fall
Reaction mechanisms, reaction kinetics, linear free energy relationships,
transition state theory, and Woodward-Hoffmann rules. Prerequisites:
both CHM 234 (or 334) and 341 (or 346) or only instructor approval.
M CHM 434 Advanced Organic Chemistry II. (3) spring
Continuation of CHM 433. Prerequisite: CHM 433 (or CHM 531) or
instructor approval.
M CHM 435 Medicinal Chemistry. (3) spring
Principles of medicinal and pharmaceutical chemistry. Drug design,
synthesis, and mechanism of action. Prerequisites: a combination of
BCH 361 (or 461) and BIO 353 and CHM 234 (or 334) or only
instructor approval.
M CHM 452 Inorganic Chemistry Laboratory. (1–2) spring
Preparation and characterization of typical inorganic substances,
emphasizing methods and techniques. 1 conference, 5 hours lab. Fee.
Prerequisite: instructor approval.
General Studies: L (if credit also earned in CHM 348 and 349)
M CHM 453 Inorganic Chemistry. (3) fall
Principles and applications of inorganic chemistry. Prerequisite: CHM
341 or 346.
M CHM 460 Biological Chemistry. (3) spring
Structure and function of macromolecules and their involvement in the
processing of energy and information by living cells. Prerequisites:
CHM 334, 346, 453.
M CHM 471 Solid-State Chemistry. (3) fall
Crystal chemistry, thermodynamics and electrochemistry of solids,
nonstoichiometric compounds, diffusion and solid-state reactions,
crystal growth, and selected topics. Pre- or corequisite: CHM 346 or
instructor approval.
M CHM 480 Methods of Teaching Chemistry. (3) spring
Organization and presentation of appropriate content of chemistry;
preparation of reagents, experiments, and demonstrations;
organization of stock rooms and laboratories; experience in problem
solving. Fee. Prerequisite: instructor approval.
M CHM 481 Geochemistry. (3) spring
Origin and distribution of the chemical elements. Geochemical cycles
operating in the earth’s atmosphere, hydrosphere, and lithosphere.
Cross-listed as GLG 481. Credit is allowed for only CHM 481 or GLG
481. Prerequisite: CHM 341 (or 346) or GLG 321.
M CHM 483 Astrobiology. (3) fall and spring
Origin, early evolution, distribution, and future of life on Earth and
elsewhere in the cosmos. May be repeated for credit. Lecture,
discussion, video conferences, possible field trips. Cross-listed as
AST 460/BIO 460/GLG 460/MIC 475. Credit is allowed for only AST
460 or BIO 460 or CHM 483 or GLG 460 or MIC 475. Prerequisite:
instructor approval.
M CHM 484 Internship. (3) selected semesters
M CHM 485 Meteorites and Cosmochemistry. (3) selected semesters
Chemistry of meteorites and their relationship to the origin of the
earth, solar system, and universe. Cross-listed as GLG 485. Credit is
allowed for only CHM 485 or GLG 485. Prerequisite: CHM 341 or 346.
M CHM 494 Special Topics. (1–4) selected semesters
Topics may include the following:
• Chemistry of Global Climate Change. (3) Omnibus Courses. For an explanation of courses offered but not
specifically listed in this catalog, see “Omnibus Courses,” page 63.
Graduate-Level Courses. For information about courses numbered
from 500 to 799, see the Graduate Catalog, or access www.asu.edu/
catalog on the Web. In some situations, undergraduate students may
be eligible to take these courses; for more information, see “Graduate-
Level Courses,” page 62.
The Department of Chicana and Chicano Studies (CCS) is an interdisciplinary degree program whose central mission is to increase the direct participation of Mexican Americans and Latinos in the human and capital development of American society. This mission is advanced by the department’s core undergraduate curriculum and related programs that examine the culture, artistic achievements, history, and status of people of Mexican descent and other Latinas and Latinos living in the U.S. The curriculum combines a research-based understanding of the humanities, social sciences, and the arts with practical CCS applications (such as studio formats, internships, and community research projects) as preparation for successful careers and productive public service in diverse communities.

CHICANA AND CHICANO STUDIES—BA

The major in Chicana and Chicano Studies requires 45 semester hours of course work. A minimum of 30 semester hours must be in CCS, CSH, and CSS courses. The remaining course work must be in a related field and approved by an advisor. All CCS majors must take 15 semester hours in the following core courses:

- **CCS 101 Introduction to Chicana and Chicano Studies** (3)
- **CCS 111 Introduction to Chicana and Chicano Culture** (3)
- **CCS 498 Pro-Seminar** (3)
- **HST 331 Mexican American History to 1900** (3)
- **HST 332 Mexican American History Since 1900** (3)

Within the 45 semester hours, CCS majors must also take 18 semester hours in one of two concentrations—humanities/cultural studies or social sciences/policy—and 12 hours in the other concentration for a total of 45 semester hours.

Majors are expected to fulfill the college’s language requirement in Spanish. Although the department advisor can make exceptions on a case-by-case basis, all majors must demonstrate proficiency in Spanish.

All Chicana and Chicano Studies majors must take an established minor or credential of at least 18 semester hours in another field.

**CHICANA AND CHICANO STUDIES MINOR**

The Chicana and Chicano Studies minor requires 18 semester hours of course work. All Chicana and Chicano Studies minors must take the following courses:

- **CCS 101 Introduction to Chicana and Chicano Studies** (3)
- **CCS 111 Introduction to Chicana and Chicano Culture** (3)
- **HST 332 Mexican American History Since 1900** (3)

Students must also take at least three semester hours in both CCS concentrations: humanities/cultural studies and social sciences/policy.

Within the 18-semester-hour requirement, students must take a minimum of 12 semester hours in CCS, CSH, and CSS courses. Any courses taken in a related field must be approved by an advisor.

**BIS CONCENTRATION**

A concentration in Chicana and Chicano studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**SECONDARY EDUCATION—BAE**

Chicana and Chicano Studies. Applications are not being accepted at this time.

**CHICANA AND CHICANO STUDIES (CCS)**

- **M CCS 101 Introduction to Chicana and Chicano Studies.** (3) fall
  - Historical and contemporary issues in the Chicana and Chicano community; focus on economic, sociological, cultural, and political status of Chicanas and Chicanos in the U.S.
  - General Studies: C

- **M CCS 111 Introduction to Chicana and Chicano Culture.** (3) fall
  - Interdisciplinary analysis of customs, values, belief systems, and cultural symbols; special attention is given to cultural continuity and change.
  - General Studies: C

- **M CCS 210 Introduction to Ethnic Studies in the U.S.** (3) fall and spring
  - Covers diversity of experiences and relations among racial and ethnic groups in the United States. Lecture, discussion. Cross-listed as AFS 210/APA 210. Credit is allowed for only AFS 210 or APA 210 or CCS 210.
  - General Studies: C
M CCS 300 Chicanas and Chicano Culture and Society. (3) fall
Intensive analysis of how Mexican American writers, artists, film
makers, entertainers, and academicians have interpreted aspects of
the Chicana and Chicano experience.
General Studies: C
M CCS 446 Teaching Chicanas and Chicano Studies in the
Schools. (3) selected semesters
Approaches/techniques for infusion of Chicanas and Chicano Studies
content into elementary and secondary curriculum; designed for
teachers who work with Chicanas and Chicano students.
M CCS 498 Pro-Seminar. (3)
once a year
Required courses for majors on topic selected by instructor; writing-
intensive course related to the development of interdisciplinary
research skills.
Omnibus Courses. For an explanation of courses offered but not
specifically listed in this catalog, see “Omnibus Courses,” page 63.
CHICANA AND CHICANO STUDIES HUMANITIES (CSH)

M CSH Note 1. With the exception of omnibus courses, all FMS
courses have a teaching method of lecture, discussion, and
screening.
M CSH Note 2. Completion of the First-Year Composition requirement
(ENG 101 and 102 [or 105] or ENG 107 and 108 with a grade of “C”
[2.00] or higher) is a prerequisite for all English courses above the 100
level.
M CSH Note 3. A term paper or equivalent out-of-class written work is
required in all upper-division (300- and 400-level) ENG courses.

M CSH 210 Chicanas and Chicano Poetry. (3)
fall
Writing seminar on Chicanas and Chicano poetics and intensive
creative writing workshop. Workshop, seminar.
M CSH 220 Chicanas and Chicano Cultural Expression. (3)
once a year
Interrelation between economic, social, and political status and forms
of artistic expression: i.e., music, dance, drama, literature, and graphic
arts.
M CSH 270 Race and Ethnicity in American Cinema. (3)
fall and summer
Explores how Hollywood shapes perceptions of race and ethnicity in
American society. Cross-listed as FMS 270. Credit is allowed for only
CSH 270 or FMS 270. Fee. See CSH Note 1.
General Studies: HU, C
M CSH 310 Chicanas and Chicano Folklore. (3)
once a year
Analyzes Chicanas and Chicano folk beliefs, traditions, and practices.
General Studies: HU, C
M CSH 350 Mexican and Mexican American Artistic Production.
(3)
once a year
Overview of Mexican and Mexican American artistic production from
colonial times to present; emphasis on religious and folk art.
General Studies: HU, C, G
M CSH 351 Contemporary Chicanas and Chicano Art. (3)
once a year
Intensive analysis of contemporary Chicanas and Chicano art
movement as appraised within the context of contemporary American
art and the art of Mexico.
General Studies: HU, C
M CSH 363 Chicanas and Chicano Literature. (3)
fall
Development of Chicanas and Chicano literature; study of genres and
themes; attention to literary antecedents. Cross-listed as ENG 363.
Credit is allowed for only CSH 363 or ENG 363. See CSH Notes 2, 3.
General Studies: L/HU, C
M CSH 484 Internship. (3)
selected semesters
M CSH 485 Chicanas and Chicano Writers. (3)
once a year
Critical reading of Mexican American women authors; emphasis on
contemporary (post-1970) poetry, novels, short stories, and essays.
General Studies: HU, C
M CSH 498 Pro-Seminar. (3)
once a year
Required course for majors on topic selected by instructor; writing-
intensive course related to the development of interdisciplinary
research skills.
Omnibus Courses. For an explanation of courses offered but not
specifically listed in this catalog, see “Omnibus Courses,” page 63.

CHICANA AND CHICANO STUDIES
SOCIAL SCIENCE (CSS)

M CSS 315 Chicanas and Chicano Politics and Policy. (3)
once a year
Historical/contemporary analysis of Chicana and Chicano political
ideologies, attitudes, strategies, and movements; relations with
governmental agencies; and public policy issues.
General Studies: C
(3)
spring
Historical, demographic, and sociological overview of the status of
Chicanas and Chicanos in urban settings as well as the public policy
relevance.
General Studies: C
M CSS 335 Latino Health Issues. (4)
spring and summer
Health issues among Chicanas and other U.S. Latinos; interplay
among political economy, health, family, culture, and community. 3
hours lecture, 1 hour lab, field research. Prerequisite: instructor
approval.
General Studies: SB, C
M CSS 336 Issues in Immigration and Migration. (3)
once a year
Historical/contemporary overview of Mexican immigration into and
within the U.S.; factors affecting population movement, settlement
patterns, and migrants’ incorporation into society.
General Studies: C, H
M CSS 432 Issues in Chicana and Chicano Gender. (3)
once a year
Analyzes social construction of gender identities; emphasizes impact
of American and Mexican cultural values on normative gender
relations.
General Studies: C
M CSS 490 Field Studies in the Chicana and Chicano Community.
(3)
once a year
Introduces principles and methods of qualitative research applied to
the Chicana and Chicano community.
M CSS 498 Pro-Seminar. (3)
once a year
Required course for majors on topic selected by instructor; writing-
intensive course related to the development of interdisciplinary
research skills. Prerequisites: both CSS 101 and HST 331 (or 332), or
only instructor approval.
Omnibus Courses. For an explanation of courses offered but not
specifically listed in this catalog, see “Omnibus Courses,” page 63.
Computational Biosciences
Professional Science Master’s Degree
www.asu.edu/compbiosci
480/965-9845
PSA 216

Rosemary Renaut, Director

GRADUATE PROGRAMS
The Professional Science Master’s (PSM) degree in Computational Biosciences is administered by an interdisciplinary committee. The faculty participating in this PSM degree program are drawn from departments that include Biology, Chemistry and Biochemistry, Computer Science Engineering, Health Management and Policy, Mathematics and Statistics, and Plant Biology.
For more information, contact the program office or refer to the Graduate Catalog.

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

Economics

ECONOMICS—BS
The program of study for the BS degree is designed for students planning to seek employment upon completion of their undergraduate studies or for students intending to go on to graduate school or law school. It provides students with the analytical and quantitative skills employers and graduate schools expect of individuals holding an economics degree. Students interested in pursuing a PhD in economics are strongly encouraged to minor or major in mathematics as well.

Requirements of the Department of Economics. The program consists of at least 45 semester hours of course work distributed between economics and related fields as shown below. Only courses in which a student receives a grade of “C” (2.00) or higher may be used to meet these requirements. Students must meet all prerequisites and course requirements as listed in this catalog. These include:

A. calculus and statistics: MAT 210 and 211; or MAT 270, 271, and 272; or MAT 290 and 291; STP 226 or QBA 221;
B. principles of economics: ECN 211 and 212;
C. completion of 24 semester hours in economics courses and quantitative business analysis courses at the 300 level or above. At least four of these courses must be at the 400 level or above. These 24 hours must include:
   1. economic theory: ECN 313 and 314;
   2. econometrics and statistics: ECN 410 or 425 or QBA 321 or STP 421;
   3. a capstone course or honors thesis: ECN 475 or 493;
   4. economics electives at the 300 level or above to fill out the remaining hours, including a maximum of three hours of ECN 484 Economics Internship and excluding ECN 475 and 493, which cannot be used to satisfy this requirement; and
D. electives chosen from the Approved List of Related Field Courses to fill out the remaining semester hours.

Latin American Studies Certificate or Emphasis. Students majoring in Economics may elect to pursue a Latin American Studies Certificate or emphasis, combining courses from the major with selected outside courses of wholly Latin American content. See “Latin American Studies,” page 512, for more information.

Certificate in International Business Studies. Students majoring in Economics may elect to pursue a Certificate in International Business Studies, combining courses from the major with selected international business courses. For more information see “Certificate in International Business Studies,” page 304.

Certificate in Quality Analysis. Students majoring in Economics may elect to pursue a Certificate in Quality Analysis, combining courses from the major with selected quantitative business analysis courses. For more information, see “Certificate in Quality Analysis,” page 294.

MINOR
Minor in General Economics. This minor (and BIS area of concentration) requires 18 semester hours of course work which includes ECN 211 and 212, and 12 hours of economics courses at the 300 level or above for which all prerequisites have been met. Only courses in which a student
receives a grade of “C” (2.00) or higher may be used to meet these requirements.

Minor in Economics for Students Planning a Career in Law. This minor requires 18 semester hours of course work that includes ECN 211, 212, 314, 450, 453, and one additional economics course at the 300 level or above for which all prerequisites have been met. Only courses in which a student receives a grade of “C” (2.00) or higher may be used to meet these requirements.

Honors Students
Students admitted to the Barrett Honors College may substitute ECN 213 Honors Macroeconomics for ECN 211 and 313, and ECN 214 Honors Microeconomics for ECN 212 and 314. These courses with grades of “C” (2.00) or higher satisfy the prerequisites and pre/corequisites for all upper-division economics courses.

BIS CONCENTRATIONS
Concentrations in (1) economics and (2) economics for students planning a career in law are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

SECONDARY EDUCATION—BAE
This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education (Economics) have an advisor in the College of Education and an advisor within the Department of Economics.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

Academic Specialization ITC Admission Requirements.
The following courses must be completed with a grade of “C” (2.00) or higher before applying to the ITC professional program:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ECN 211 Macroeconomic Principles SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 212 Microeconomic Principles SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 313 Intermediate Macroeconomic Theory SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 314 Intermediate Microeconomic Theory SB</td>
<td>3</td>
</tr>
<tr>
<td>MAT 210 Brief Calculus MA</td>
<td>3</td>
</tr>
</tbody>
</table>

Economics. The major teaching field consists of 45 semester hours and six hours in teaching methods. A minimum grade of “C” (2.00) is required in all academic specialization courses. Required major courses are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECN 211 Macroeconomic Principles SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 212 Microeconomic Principles SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 313 Intermediate Macroeconomic Theory SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 314 Intermediate Microeconomic Theory SB</td>
<td>3</td>
</tr>
<tr>
<td>MAT 210 Brief Calculus MA</td>
<td>3</td>
</tr>
</tbody>
</table>

Required major courses are as follows:

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>ECN 211 Macroeconomic Principles SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 212 Microeconomic Principles SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 313 Intermediate Macroeconomic Theory SB</td>
<td>3</td>
</tr>
<tr>
<td>ECN 314 Intermediate Microeconomic Theory SB</td>
<td>3</td>
</tr>
<tr>
<td>MAT 210 Brief Calculus MA</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>QBA 221 Statistical Analysis CS</td>
<td>3</td>
</tr>
<tr>
<td>STP 226 Elements of Statistics CS</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECN 410 Applied Business Forecasting</td>
<td>3</td>
</tr>
<tr>
<td>ECN 425 Introduction to Econometrics CS</td>
<td>3</td>
</tr>
<tr>
<td>QBA 321 Applied Quality Analysis I</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECN 475 Capstone in Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECN 493 Honors Thesis</td>
<td>3</td>
</tr>
</tbody>
</table>

Upper-division economics electives: 12

Related area course*: 3

Total: 45

* Choose courses in consultation with an economics advisor.

Teaching Methods
SED 480 Special Methods of Teaching Social Studies: 3

Additional teaching methods course*: 3

Total: 6

* Choose courses in consultation with an education advisor.

Social Studies. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

GRADUATE PROGRAMS
The faculty in the Department of Economics offer programs leading to the MS and PhD degrees. See the Graduate Catalog for requirements.

For faculty and course descriptions, see “Department of Economics,” page 298.

COURSES
For courses, see “Economics (ECN),” page 299.
ENGLISH—BA

The faculty in the Department of English offer courses in comparative literature, creative writing, English as a second language, English education, English linguistics, film and media studies, literature and language, and rhetoric and composition. Undergraduate degrees include the BA degree in English, with a concentration in creative writing, linguistics, or literature, and a Secondary Education Bachelor of Arts in Education degree. The faculty also offer a Writing Certificate. Students should work with advisors to design an individual program of study that takes full advantage of the diversity within the department as well as interdisciplinary and multicultural contexts available in the college and university.

The BA degree in English with a concentration in creative writing consists of 45 semester hours. Application to the program requires a minimum cumulative GPA of 3.00. Students must also have completed 45 hours of course work. Required courses are as follows:

ENG 200 Critical Reading and Writing About Literature L/HU ......................................................... 3
ENG 210 Introduction to Creative Writing ................................................................. 3
ENG 221 Survey of English Literature HU ......................................................... 3
or ENG 222 Survey of English Literature HU, H (3)

Six additional hours must be chosen from a course list supplied by the departmental advisor.

The nine remaining hours needed to complete the 45 semester hours are electives chosen from the department’s offerings at the 200 level and above. At least 18 of the 45 hours must be taken at the 300 or 400 level. At least 12 of these upper-division semester hours must be completed at the Tempe campus, including at least one ENG 310 or ENG 411 writing workshop in the student’s chosen genre. A grade of “C” (2.00) or higher is required in all courses taken for the major. A 3.00 GPA in the major is required for graduation.

The BA degree in English with a concentration in linguistics consists of 42 semester hours. Required courses are as follows:

ENG 200 Critical Reading and Writing About Literature L/HU ......................................................... 3
ENG 213 Introduction to the Study of Language ......................................................... 3
ENG 221 Survey of English Literature HU ......................................................... 3
or ENG 222 Survey of English Literature HU, H (3)
or ENG 241 Literatures of the United States to 1860 HU (3)
or ENG 242 Literatures of the United States, 1860 to Present HU (3)

ENG 312 English in its Social Setting L/HU/SB ......................................................... 3
ENG 313 Phonology and Morphology L ................................................................. 3
ENG 314 Modern Grammar ................................................................. 3
ENG 413 History of the English Language HU ......................................................... 3
ENG 414 Studies in Linguistics (repeated for a total of nine semester hours) ......................................................... 9

Twelve additional hours are electives, chosen in consultation with the student’s advisor. These courses must be at the 200 level or above. At least one must be a three-semester-hour course in a modern language other than English at the 400 level or above. A grade of “C” (2.00) or higher is required in all courses taken for the major. No course may be used to satisfy more than one requirement.

The BA degree in English with a concentration in literature consists of 45 semester hours. Required courses are as follows:

ENG 200 Critical Reading and Writing About Literature L/HU ......................................................... 3
ENG 221 Survey of English Literature HU ......................................................... 3
ENG 222 Survey of English Literature HU, H ......................................................... 3
ENG 241 Literatures of the United States, 1860 to Present HU (3)

ENG 242 Literatures of the United States, 1860 to Present HU ......................................................... 3
ENG 421 Shakespeare HU ................................................................. 3

COLLEGE OF LIBERAL ARTS AND SCIENCES

Courses taken to fulfill the areas and periods listed below can be used to satisfy more than one of these requirements:

Upper-division course in critical theory (3)
Upper-division course in gender, American ethnic literatures, and/or postcolonial studies (3)
Course in the history and/or structure of language (3)
Upper-division course in literature before 1660, exclusive of ENG 303, 321, 355, 356, and 421 (3)
Upper-division course in literature between 1660 and 1900 (3)
Upper-division course in literature after 1900 (3)

Additional hours needed to complete the 45 hours are electives chosen from the department’s offerings at the 200 level and above. At least 18 of the 45 hours must be at the 300 or 400 level. A grade of “C” (2.00) or higher is required in all courses taken for the major.

MINORS

The minor in English with a concentration in linguistics consists of 24 semester hours. Required courses are as follows:

ENG 200 Critical Reading and Writing About Literature L/HU .........................................................3
ENG 213 Introduction to the Study of Language ...........................................................3
ENG 221 Survey of English Literature HU .......................................................3 or ENG 222 Survey of English Literature HU, H (3) or ENG 241 Literatures of the United States to 1860 HU (3) or ENG 242 Literatures of the United States, 1860 to Present HU (3)
ENG 312 English in Its Social Setting L/HU/SB .................................................3
ENG 314 Modern Grammar ......................................................................................3
ENG 413 History of the English Language HU .........................................................3

The six additional hours are electives chosen from the department’s offerings, with at least one course (three hours) required at the 300 or 400 level. A grade of “C” (2.00) or higher is required in all courses for the minor.

The minor in English with a concentration in literature consists of 24 semester hours. These courses are required:

ENG 200 Critical Reading and Writing About Literature L/HU .........................................................3
ENG 221 Survey of English Literature HU .......................................................3 or ENG 222 Survey of English Literature HU, H (3) or ENG 241 Literatures of the United States to 1860 HU (3) or ENG 242 Literatures of the United States, 1860 to Present HU (3)
ENG 321 Introduction to Shakespeare L/HU .........................................................3 or ENG 421 Shakespeare HU (3)

Also required are two upper-division courses in literature (six hours) and two electives (six hours) chosen from among the department’s offerings, with at least one course (three hours) at the 300 or 400 level. A grade of “C” (2.00) or higher is required in all courses taken for the minor.

BIS CONCENTRATIONS

Four concentrations in English (creative writing, linguistics concentration, literature concentration, and writing certificate) are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

WRITING CERTIFICATE

The Writing Certificate consists of 19 semester hours. Initial entry into the program requires a minimum GPA of 3.00 in ENG 101 and 102, 105, or 107 and 108. Students must also have completed at least 30 hours of course work and must have a minimum GPA of 3.00. Required courses are as follows:

ENG 216 Persuasive Writing on Public Issues L .................................................3 or ENG 412 Creative Nonfiction (3)
ENG 301 Writing for the Professions L .........................................................3
ENG 372 Document Production L .........................................................3
ENG 472 Rhetorical Studies L .........................................................3
ENG 484 Internship: Writing Certificate .........................................................3
ENG 498 PS: Writing Certificate Portfolio .........................................................1

Total ...........................................................................................................16

Also required is an additional writing course in English (three hours) or a writing or design course (three hours) selected from an approved list of courses from across campus. All students are required to submit a portfolio before receiving the certificate.

SECONDARY EDUCATION—BAE

This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education with an academic specialization in English have an advisor in the College of Education and an advisor within the Department of English.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

Academic Specialization ITC Admission Requirements.

The following courses must be completed with a grade of “C” (2.00) or higher before applying to the ITC professional program:

ENG 200 Critical Reading and Writing About Literature L/HU ....3

At least three additional required courses in the academic specialization .................................................................9

English. The major teaching field consists of 39 semester hours with an additional six hours of teaching methods in English. A grade of “C” (2.00) or higher is required in all academic specialization courses. Required courses are as follows:

ENG 200 Critical Reading and Writing About Literature L/HU ........3
ENG 212 English Prose Style L .........................................................3 or ENG 215 Strategies of Academic Writing L (3)
or ENG 216 Persuasive Writing on Public Issues L (3)
or ENG 217 Writing Reflective Essays L (3)
ENG 221 Survey of English Literature HU .................................3
ENG 222 Survey of English Literature HU, H ............................3
ENG 241 Literatures of the United States to 1860 HU .................3
ENG 242 Literatures of the United States, 1860 to Present HU .......3
ENG 312 English in Its Social Setting L/HU/SB .........................3
or ENG 314 Modern Grammar (3)
ENG 421 Shakespeare HU ..................................................3
or ENG 422 Studies in Shakespeare HU .................................3
ENG 471 Literature for Adolescents HU ..................................3
An upper-division course in women’s literature
or American ethnic literature .................................................3
Electives ..................................................................................3
Upper-division electives .......................................................6
Total ......................................................................................39

Teaching Methods
ENG 480 Methods of Teaching English: Composition L ..........3
ENG 482 Methods of Teaching English: Language L ...............3
Total ......................................................................................6

GRADUATE PROGRAMS
The faculty in the Department of English offer programs
leading to the MA degree in English (with concentrations in
comparative literature, English linguistics, literature and
language, and rhetoric and composition), Master of Fine
Arts degree in Creative Writing (options include fiction,
nonfiction, and poetry), Master of Teaching English as a
Second Language degree, and PhD degree in English with
two concentrations, one in literature and one in rhetoric/
composition and linguistics. See the Graduate Catalog for
requirements.

ENGLISH (ENG)
For more ENG courses, see the “Course Prefixes” table, or access
www.asu.edu/catalog/courses. The campus designation—D
(Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may
affect how courses may be used to fulfill requirements.

M ENG Note 1. Completion of the First-Year Composition requirement
(ENG 101 and 102 [or 105] or ENG 107 and 108 with a grade of “C”
[2.00] or higher) is a prerequisite for all English courses above the 100
level.
M ENG Note 2. A term paper or equivalent out-of-class written work is
required in all upper-division (300- and 400-level) ENG courses.
M ENG Note 3. English majors and minors are expected to have completed ENG 200 before taking 400-level literature courses.

M ENG 101 First-Year Composition. (3)
fall, spring, summer
Discovering, organizing, and developing ideas in relation to the
writer’s purpose, subject, and audience. Emphasizes modes of written
discourse and effective use of rhetorical principles. Foreign students,
see ENG 107. Prerequisite: see “University Testing Requirements,”
page 75, and “First-Year Composition Requirement,” page 89.
M ENG 102 First-Year Composition. (3)
fall, spring, summer
Critical reading and writing; emphasis on strategies of academic
discourse. Requires research paper. Foreign students, see ENG 108.
Prerequisite with a grade of “C” [2.00] or higher: ENG 101.
M ENG 105 Advanced First-Year Composition. (3)
fall and spring
Concentrated composition course for students with superior writing
skills; intensive reading; research papers; logical and rhetorical
effectiveness. Credit is allowed for only ENG 105 or First-Year
Composition. Prerequisite: see “University Testing Requirements,”
page 75, and “First-Year Composition Requirement,” page 89.
M ENG 107 English for Foreign Students. (3)
fall and spring
For students from non-English-speaking countries who have studied
English in their native countries, but who require practice in the idioms of
English. Intensive reading, writing, and discussion. Satisfies the
graduation requirement of ENG 101.
M ENG 108 English for Foreign Students. (3)
fall and spring
For foreign students; critical reading and writing; strategies of
academic discourse. Requires research paper. Satisfies graduation
requirement of ENG 102. Prerequisite with a grade of “C” [2.00] or
higher: ENG 107.
M ENG 114 English Grammar and Usage. (3)
fall and spring
Fundamentals of English grammar (word and phrase structure) and of
English usage (punctuation, grammatical correctness).
M ENG 200 Critical Reading and Writing About Literature. (3)
fall and spring
Introduces the terminology, methods, and objectives of the study of
literature, with practice in interpretation and evaluation. See ENG
Note 1. Prerequisite: English major or minor.
General Studies: L/HU
M ENG 201 World Literature. (3)
fall
Classical and medieval periods. Selections from the great literature of
the world in translation and lectures on the cultural background. See
ENG Note 1.
General Studies: HU, G, H
M ENG 202 World Literature. (3)
spring
Renaissance and modern periods. Selections from the great literature
of the world in translation and lectures on the cultural background.
See ENG Note 1.
General Studies: HU, H
M ENG 204 Introduction to Contemporary Literature. (3)
one a year
Poetry, fiction, drama, and possibly other genres. See ENG Note 1.
General Studies: L/HU
M ENG 210 Introduction to Creative Writing. (3)
fall and spring
Beginning writing of poetry, fiction, drama, or mixed genre. Separate
sections for each genre. Each genre may be taken once. See ENG
Note 1.
M ENG 212 English Prose Style. (3)
selected semesters
Analysis and practice of writing in various classical and modern prose
styles. See ENG Note 1. Prerequisite: preferably English major or both
approval of advisor and instructor. Prerequisite with a grade of “B”
(3.00) or higher: ENG 102 or 105.
General Studies: L
M ENG 213 Introduction to the Study of Language. (3)
fall and spring
Language as code; phonetics, phonology, morphology, and syntax;
the lexicon; language acquisition; sociolinguistics. See ENG Note 1.
General Studies: L

L literacy and critical inquiry / MA mathematics / CS computer/statistics/
quantitative applications / HU humanities and fine arts / SB social and
behavioral sciences / SG natural science—general core courses / SQ natural
science—quantitative / C cultural diversity in the United States / G global /
H historical / See “General Studies,” page 93.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Format</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M ENG 216</td>
<td>Persuasive Writing on Public Issues</td>
<td>3</td>
<td>Fall</td>
<td></td>
<td></td>
<td>Advanced course in techniques of analyzing and writing persuasive arguments addressing topics of current public interest. See ENG Note 1. General Studies: L.</td>
</tr>
<tr>
<td>M ENG 217</td>
<td>Writing Reflective Essays</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>Critical examination of the influences discourse has on formation of identity; narrative analyses of self and culture. See ENG Note 1. General Studies: L.</td>
</tr>
<tr>
<td>M ENG 218</td>
<td>Writing About Literature</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>Advanced writing course requiring analytical and expository essays about fiction, poetry, and drama. For non-English majors. See ENG Notes 1, 2. General Studies: L/HU.</td>
</tr>
<tr>
<td>M ENG 221</td>
<td>Survey of English Literature</td>
<td>3</td>
<td>Fall</td>
<td></td>
<td></td>
<td>Medieval, Renaissance, and 18th-century literature. Emphasizes major writers and their works in their literary and historical contexts. See ENG Note 1. General Studies: HU.</td>
</tr>
<tr>
<td>M ENG 222</td>
<td>Survey of English Literature</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>Survey of literary movements and genres from colonization to the Civil War. See ENG Note 1. General Studies: HU.</td>
</tr>
<tr>
<td>M ENG 241</td>
<td>Literatures of the United States to 1860</td>
<td>3</td>
<td>Fall</td>
<td></td>
<td></td>
<td>Survey of literary movements and genres from colonization to the Civil War. See ENG Note 1. General Studies: HU.</td>
</tr>
<tr>
<td>M ENG 242</td>
<td>Literatures of the United States, 1860 to Present</td>
<td>3</td>
<td>Fall</td>
<td></td>
<td></td>
<td>Survey of literary movements and genres from the Civil War to the present. See ENG Note 1. General Studies: HU.</td>
</tr>
<tr>
<td>M ENG 245</td>
<td>Popular Culture Issues</td>
<td>3</td>
<td>Fall</td>
<td></td>
<td></td>
<td>Selected topics in various forms of popular culture related to written texts. May be repeated for credit when topics vary. See ENG Note 1. General Studies: HU.</td>
</tr>
<tr>
<td>M ENG 301</td>
<td>Writing for the Professions</td>
<td>3</td>
<td>Fall</td>
<td></td>
<td></td>
<td>Advanced practice in writing and editing expository prose. Primarily for preprofessional majors. See ENG Notes 1, 2. General Studies: L.</td>
</tr>
<tr>
<td>M ENG 302</td>
<td>Business Writing</td>
<td>3</td>
<td>Selected Semesters</td>
<td></td>
<td></td>
<td>Advanced interdisciplinary writing course designed to improve workplace writing competence of W. P. Carey School of Business professional and preprofessional students. Lecture, discussion, case studies, cooperative learning, interactive, Internet, student presentations. See ENG Notes 1, 2. Prerequisite: prebusiness or business major.</td>
</tr>
<tr>
<td>M ENG 303</td>
<td>Classical Backgrounds of English Literature</td>
<td>3</td>
<td>Selected Semesters</td>
<td></td>
<td></td>
<td>Readings of Greek and Latin literature in translation as they relate to literature in English. See ENG Notes 1, 2. General Studies: L/HU.</td>
</tr>
<tr>
<td>M ENG 307</td>
<td>Writing Science Fiction</td>
<td>3</td>
<td>Selected Semesters</td>
<td></td>
<td></td>
<td>Writing science fiction, primarily the short story. Lecture, workshop, online supplements. See ENG Notes 1, 2. General Studies: L/HU.</td>
</tr>
<tr>
<td>M ENG 310</td>
<td>Intermediate Creative Writing</td>
<td>3</td>
<td>Fall</td>
<td></td>
<td></td>
<td>Separate sections for fiction and poetry. May be taken once for poetry, once for fiction. Lecture, writing assignments, discussion, criticism. See ENG Notes 1, 2. Prerequisite: ENG 210 or instructor approval. General Studies: HU.</td>
</tr>
</tbody>
</table>
M ENG 345 Selected Authors or Issues. (3–4)  
selected semesters  
Different topics may be offered. Film topics with lab may carry 4 credits. May be repeated for credit when topics vary. See ENG Notes 1, 2.

M ENG 352 Short Story, (3)  
fall and spring  
Development of the short story as a literary form; analysis of its technique from the work of representative authors. See ENG Notes 1, 2.  
General Studies: L/HU

M ENG 353 African American Literature: Beginnings Through the Harlem Renaissance. (3)  
fall  
Historical survey of African American literary traditions and cultural contexts from slavery through the 1930s. Cross-listed as AFH 353. Credit is allowed for only AFH 353 or ENG 353. See ENG Notes 1, 2.  
General Studies: L/HU, C

M ENG 354 African American Literature: Harlem Renaissance to the Present. (3)  
spring  
Historical survey of African American literary traditions and cultural contexts from the 1920s to the present. Cross-listed as AFH 354. Credit is allowed for only AFH 354 or ENG 354. See ENG Notes 1, 2.  
General Studies: L/HU, C

M ENG 355 European Dramatic Traditions. (3)  
selected semesters  
Development of European drama since Aeschylus. See ENG Notes 1, 2.  
General Studies: L/HU

M ENG 356 The Bible as Literature. (3)  
fall and spring  
Readings in the Jewish and Christian Scriptures in modern translation. See ENG Notes 1, 2.  
General Studies: HU

M ENG 359 American Indian Literatures. (3)  
selected semesters  
Selected oral traditions and contemporary works by American Indian authors. See ENG Notes 1, 2.  
General Studies: L/HU, C

M ENG 360 Western American Literature. (3)  
once a year  
Critical examination of ideas and traditions of the literature of the western United States, including the novel. See ENG Notes 1, 2.  
General Studies: L/HU

M ENG 363 Chicana and Chicano Literature. (3)  
fall  
Development of Chicana and Chicano literature; study of genres and themes; attention to literary antecedents. Cross-listed as CSH 363. Credit is allowed for only CSH 363 or ENG 363. See ENG Notes 1, 2.  
General Studies: L/HU, C

M ENG 364 Women and Literature. (3)  
selected semesters  
Approaches to issues of gender and representation in literature by and about women. See ENG Notes 1, 2.  
General Studies: HU

M ENG 365 History of Film. (3–4)  
selected semesters  
Development of motion pictures. 3 hours lecture, screenings. See ENG Notes 1, 2.  
General Studies: HU

M ENG 369 Science Fiction Studies. (3)  
selected semesters  
Examines science fiction in cultural context. May be repeated for credit. Lecture, discussion, face-to-face, hybrid, or online. See ENG Notes 1, 2.  

M ENG 372 Document Production. (3)  
fall and spring  
Introduces document design and production. Practice in critique and in writing the content of publications. Lecture, discussion. See ENG Notes 1, 2. Prerequisite: instructor approval.  
General Studies: L

M ENG 374 Technical Editing. (3)  
fall and spring  
Fundamentals of editing technical and professional materials. Role of editors in analyzing, revising, and polishing manuscripts. Successful writer-editor dialogues. See ENG Notes 1, 2.

M ENG 385 Career Development for English Majors. (3)  
selected semesters  
Theoretical and practical aspects of career planning related to skills and interests developed in English studies. Lecture, discussion, workshop. See ENG Notes 1, 2.  
General Studies: L

M ENG 400 History of Literary Criticism. (3)  
selected semesters  
Major critics and critical traditions in the Western world. See ENG Notes 1, 2, 3. Prerequisite: 6 hours in literature or instructor approval.  
General Studies: L/HU, H

M ENG 401 Topics in Critical Theory. (3)  
selected semesters  
Major critical schools of recent decades—postcolonialist, psychoanalytic, deconstructionist, feminist, new historicist. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: 6 hours in literature or instructor approval.

M ENG 409 Advanced Screenwriting. (3)  
selected semesters  
Applies the principles taught in a complete feature-length screenplay. See ENG Notes 1, 2. Prerequisite: instructor approval.

M ENG 411 Advanced Creative Writing. (3)  
fall and spring  
Poetry, fiction, and drama for experienced writers, emphasizing individual style. Each genre may be taken once. See ENG Notes 1, 2. Prerequisite: ENG 310 or instructor approval.

M ENG 412 Creative Nonfiction. (3)  
selected semesters  
Lectures, discussion, and criticism concerning techniques of writing creative nonfiction for publication. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 411 or instructor approval.

M ENG 413 History of the English Language. (3)  
once a year  
Development of English from the earliest times to the modern period. See ENG Notes 1, 2. Prerequisite: junior standing or instructor approval.  
General Studies: HU

M ENG 414 Studies in Linguistics. (3)  
fall and spring  
Relationship of linguistics to literature, gender, power, and other social issues. May be repeated for credit. See ENG Notes 1, 2. Prerequisite: ENG 213 or 312 or 314 or 413 or instructor approval.

M ENG 415 Topics in Medieval Literature and Culture. (3)  
selected semesters  
Interdisciplinary approach to medieval literature, emphasizing cultural and historical context. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.  
General Studies: HU

M ENG 416 Chaucer in Middle English. (3)  
once a year  
Yearly alternate between Chaucer’s The Canterbury Tales and Troilus and Criseyde. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.  
General Studies: HU

M ENG 418 Renaissance Literature. (3)  
once a year  
Selected topics, authors, contexts, and themes in Renaissance literature. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval.  
General Studies: L/HU

M ENG 419 English Literature in the Early 17th Century. (3)
 once a year
Topics, authors, and themes in English literature, 1603–1660. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval. General Studies: HU

M ENG 421 Shakespeare. (3)
 fall and spring
A selection of Shakespeare’s works in different genres. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval. General Studies: HU

M ENG 422 Studies in Shakespeare. (3)
 once a year
Topics for close examination in selected dramatic and/or nondramatic works. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 421 or instructor approval. General Studies: HU

M ENG 423 Renaissance Drama. (3)
spring
Topics, authors, and themes in the drama of the Tudor and early Stuart periods. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval. General Studies: HU

M ENG 424 Milton. (3)
 once a year
Selected prose and poetry, emphasizing Paradise Lost, Paradise Regained, and Samson Agonistes. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or instructor approval. General Studies: HU

M ENG 425 Studies in Romanticism. (3)
fall
Romanticism in continental, British, and American literature and culture. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or 241 or instructor approval. General Studies: HU

M ENG 427 Studies in 18th-Century Literature and Culture. (3)
 selected semesters
Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or 222 or instructor approval. General Studies: HU

M ENG 429 Studies in European Literature and Culture. (3)
 selected semesters
Literary, cultural, and historical issues. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Topics may include the following:
• Feminist Political Writing in Contemporary Europe. (3) Examines the discourse of gender-politics in Central Eastern Europe before and after Soviet hegemony. Cross-listed as FLA 461. Credit is allowed for only ENG 429 or FLA 461.
• Literature and Film in 20th-Century Eastern Europe. (3) Evaluates literary texts and films as a massive propaganda machine of the totalitarian state. Cross-listed as FLA 476. Credit is allowed for only ENG 429 or FLA 476.
• Literature and Politics in Pre- and Post-Communist Europe. (3) Interdisciplinary examination of the cultures of Eastern Europe from WWI to present. Cross-listed as FLA 472. Credit is allowed for only ENG 429 or FLA 472.
• Politics of Drama in 20th-Century Europe. (3) Interdisciplinary examination of European drama before and after WWII. Cross-listed as FLA 464. Credit is allowed for only ENG 429 or FLA 464.

M ENG 430 Studies in Victorian Literature and Culture. (3)
 once a year
Literary, social, and cultural issues of the period studied in an interdisciplinary format. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or instructor approval. General Studies: L/HU

M ENG 434 Studies in the Literature and Culture of the Americas. (3)
 selected semesters
Literature and culture of North America, South America, and the Caribbean. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or 242 or instructor approval. General Studies: HU

M ENG 436 Studies in Anglophone Literature and Culture. (3)
 selected semesters
Literary, social, and cultural issues of English-speaking former colonial territories. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or 242 or instructor approval.

M ENG 440 Studies in American Literature and Culture. (3)
 once a year
Various genres in their literary, political, theoretical, and historical contexts. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or 242 or instructor approval. General Studies: HU

M ENG 442 Studies in 20th-Century British and Irish Literature and Culture. (3)
 once a year
Major literary genres (novel, poetry, and drama) in their cultural and historical contexts. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or instructor approval.

M ENG 444 Studies in American Romanticism. (3)
 once a year
Fiction, poetry, and essays of such 19th-century authors as Hawthorne, Emerson, Melville, Thoreau, Fuller, Whitman, and Dickinson. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or instructor approval. General Studies: HU

M ENG 445 Studies in American Realism. (3)
 once a year
Writers and influences that shaped the development of literary realism. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 242 or instructor approval. General Studies: L/HU

M ENG 446 Studies in Irish Literature and Culture. (3)
 selected semesters
Themes and problems pertaining to Irish literature, film, and social and cultural history. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or instructor approval. General Studies: HU

M ENG 452 Studies in the Novel. (3)
 selected semesters
May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or 222 or 241 or 242 or instructor approval. General Studies: HU

M ENG 453 Studies in the American Novel. (3)
 fall and spring
Poetics and politics of the novel, 18th through 21st centuries. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or 242 or instructor approval. General Studies: HU

M ENG 457 Studies in American Poetry. (3)
 selected semesters
May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. Prerequisite: ENG 241 or 242 or instructor approval. General Studies: HU

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

M ENG 461 Studies in Women and Literature. (3)
 selected semesters
Advanced topics in literature by or about women. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3. General Studies: HU
M ENG 464 Studies in Drama. (3) selected semesters
Selected topics in the history and theory of the genre. See ENG Notes 1, 2, 3. Prerequisite: ENG 221 or 222 or 241 or 242 or instructor approval.
General Studies: L/HU

M ENG 465 Studies in Film. (3–4) selected semesters
Advanced topics in cinema. May be repeated for credit when topics vary. Lecture, viewing, discussion. See ENG Notes 1, 2.

M ENG 469 Science and Literature. (3) selected semesters
Historical and theoretical links between science and literature, from Francis Bacon to the present, examined in cultural context. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3.
General Studies: L/HU

M ENG 470 Symbols and Archetypes in Children’s Literature. (3) fall
Various critical approaches and recurring themes studied in relation to classical and contemporary children’s literature. Lecture, discussion, reading. See ENG Notes 1, 2, 3.
General Studies: L/HU

M ENG 471 Literature for Adolescents. (3) fall and spring
Prose and poetry that meet the interests and capabilities of junior high and high school students. Stresses recent literature. Requires passing grade of at least "C" (2.00) before students are permitted to student teach in English. See ENG Notes 1, 2, 3.
General Studies: HU

M ENG 472 Rhetorical Studies. (3) fall and spring
Developments in theory and practice of major rhetorical inquiries. Seminar, workshop. See ENG Notes 1, 2. Prerequisite: junior standing.
General Studies: L

M ENG 476 Studies in Folklore. (3) selected semesters
Surveys the history, genres, and dynamics of folklore, with emphasis on oral traditions. May be repeated for credit when topics vary. See ENG Notes 1, 2, 3.
General Studies: HU

M ENG 478 Studies in Modernism. (3) selected semesters
Cultural, historical, and literary problems in American and European modernism. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or instructor approval.
General Studies: HU

M ENG 479 Studies in Postmodernism. (3) selected semesters
Literary, social, and cultural issues. May be repeated for credit when topics vary. Lecture, discussion. See ENG Notes 1, 2, 3. Prerequisite: ENG 222 or 242 or instructor approval.

M ENG 480 Methods of Teaching English: Composition. (3) fall or spring and summer
Methods of instruction, organization, and presentation of appropriate content in the teaching of composition and other writing skills. See ENG Notes 1, 2.
General Studies: L

M ENG 482 Methods of Teaching English: Language. (3) fall or spring and summer
Methods of instruction, organization, and presentation of appropriate content in language and usage for junior and senior high schools. Lecture, discussion, lab. See ENG Notes 1, 2.
General Studies: L

M ENG 484 Internship. (1–12) fall and spring
Selected from the following areas. May be repeated for credit. See ENG Notes 1, 2. Topics may include the following:
• General. (1–12)
• Service Learning. (3) Fee.
• Writing Certificate. (3)

M ENG 493 Honors Thesis. (1–6) selected semesters
General Studies: L

M ENG 495 Literary Forms: Theory and Practice. (3) selected semesters
Types, history, analysis of traditional forms and contemporary adaptations. Separate sections for poetry, fiction. Each genre may be taken once. See ENG Notes 1, 2. Prerequisite: ENG 411 in same genre or instructor approval.

M ENG 498 Pro-Seminar. (1–7) fall and spring
Selected from the following areas. May be repeated for credit when topics vary. See ENG Notes 1, 2. Topics may include the following:
• Directions in Creative Writing. (3)
• Introduction to Graduate Studies. (1)
• Issues in Creative Writing. (3)
• Writing Certificate Portfolio. (1)

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

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

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

WRITING ACROSS THE CURRICULUM (WAC)
For more WAC courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M WAC 101 Introduction to Academic Writing. (3) fall and spring
Combines classroom and supplemental instruction to teach academic genres of writing, including definition, summary, and analysis.

M WAC 107 Introduction to Academic Writing for International Students. (3) fall and spring
For students from non-English-speaking countries. Combines classroom and supplemental instruction with intensive reading, writing, and discussion.

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
FAMILY AND HUMAN DEVELOPMENT—BS

For the BS degree in Family and Human Development at the Tempe campus, students must pursue the concentration in family studies/child development. The mathematics proficiency must be met by completing MAT 142 or higher.

Family Studies/Child Development
The concentration in family studies/child development consists of the following core courses:

CDE 232 Human Development SB ........................................ 3
CDE 338 Child Development Practicum .................................. 3
CDE 430 Infant/Toddler Development in the Family SB ........ 3
FAS 331 Marriage and Family Relationships SB ................. 3
FAS 361 Introduction to Family/Child Research Methods L ...... 3
FAS 370 Family, Ethnic, and Cultural Diversity SB, C ........... 3
FAS 431 Parent-Adolescent Relationships SB ......................... 3
FAS 435 Advanced Marriage and Family Relationships L/SB ... 3
FAS 484 Internship ......................................................... 3
or FAS 390 Supervised Research Experience (3)
FAS 498 Pro-Seminar .......................................................... 3
Total .................................................................................. 30

In addition, 12 semester hours of unrestricted electives must be taken from the following:

CDE 337 Early Childhood Intervention .................................. 3
CDE 437 Infant Family Assessment and Observation L/SB ........ 3
CDE 444 Risk and Variation in Child Development ............... 3
FAS 498 Pro-Seminar .......................................................... 3
or FAS 498 Pro-Seminar (3)
FAS 301 Introduction to Parenting ........................................ 3
FAS 330 Personal Growth in Human Relationships SB .......... 3
FAS 332 Human Sexuality SB .............................................. 3
FAS 390 Supervised Research Experience ............................. 1–3
FAS 440 Fundamentals of Marriage and Family Therapy ....... 3
FAS 484 Internship ............................................................. 1–3
FAS 499 Individualized Instruction ........................................ 3
or CDE 499 Individualized Instruction (3)

One statistics course is required; students may choose from courses such as PSY 230 Introduction to Statistics or EDP 454 Statistical Data Analysis in Education.

FAMILY AND HUMAN DEVELOPMENT MINOR

The minor in Family and Human Development consists of 18 semester hours in which students specialize in family studies/child development.

At least 12 of the 18 semester hours must be in upper-division courses.

Students take the following courses:

CDE 232 Human Development SB ........................................ 3
FAS 331 Marriage and Family Relationships SB ................. 3
FAS 440 Fundamentals of Marriage and Family Therapy ....... 3
Total .................................................................................. 9

Three courses (or nine semester hours) must be selected from the following and at least one course must be a CDE course:

CDE 337 Early Childhood Intervention .................................. 3
CDE 430 Infant/Toddler Development in the Family SB ......... 3
CDE 444 Risk and Variation in Child Development ............... 3
CDE 498 Pro-Seminar .......................................................... 3
or FAS 498 Pro-Seminar (3)
FAS 370 Family, Ethnic, and Cultural Diversity SB, C .......... 3
FAS 431 Parent-Adolescent Relationships SB ......................... 3

BIS CONCENTRATION

A concentration in family studies/child development is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

SECONDARY EDUCATION—BAE

Family and Human Development. Applications are not being accepted at this time.

GRADUATE PROGRAMS

The faculty in the Department of Family and Human Development offer programs leading to the MS and PhD degrees. See the Graduate Catalog for requirements.

CHILD DEVELOPMENT (CDE)

M CDE 232 Human Development, (3)
fall, spring, summer
Lifespan development from conception through adulthood, with emphasis on family influences. Recognizes individuality within the universal pattern of development.

General Studies: SB

M CDE 337 Early Childhood Intervention, (3)
fall and spring
Explores how child development theory affects practice with children and families, emphasizing development of young children and early intervention. Cross-listed as SWU 337. Credit is allowed for only CDE 337 or SWU 337. Prerequisite: CDE 232 or SWU 301 (or their equivalents).
FAMILY STUDIES (FAS)

For more FAS courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M FAS 301 Introduction to Parenting. (3)
fall and spring
Integrated approach to understanding parenting and parent-child interactions. Television course. Prerequisites: PGS 101; SOC 101 (or its equivalent).

M FAS 330 Personal Growth in Human Relationships. (3)
fall and spring
Personal development and behavior as related to competency in interpersonal relationships within the family. Processes of family interaction. Prerequisites: PGS 101; SOC 101 (or its equivalent).

M FAS 331 Marriage and Family Relationships. (3)
fall and spring
Issues, challenges, and opportunities relating to present-day marriage and family living. Factors influencing interrelations within the family. Prerequisite: a course in psychology or sociology.

M FAS 332 Human Sexuality. (3)
fall and spring
Relationship of sexuality to family life and to major societal issues. Emphasizes developing healthy, positive, and responsive ways of integrating sexual and other aspects of human living. Prerequisite: PGS 101.

M FAS 351 Introduction to Family/Child Research Methods. (3)
fall and spring
Examines basic methods applied to family/child research, critiques current research literature, and applies methods in current topics. Prerequisites: CDE 232; FAS 331.

M FAS 360 Advanced Marriage and Family Relationships. (3)
fall and spring
Dynamics of the relationships between parents and adolescents. Developmental characteristics of adolescence and the corresponding adult stage. Prerequisites: CDE 232; FAS 331.

M FAS 370 Family, Ethnic, and Cultural Diversity. (3)
fall and spring
Integrative approach to understanding historical and current issues related to the structure and internal dynamics of diverse American families. Lecture, discussion. Cross-listed as AFS 370. Credit is allowed for only AFS 370 or FAS 370. Prerequisite: PGS 101 or SOC 101.

M FAS 390 Supervised Research Experience. (1–3)
fall, spring, summer
Practical, firsthand experience within current faculty research projects in family studies or child development. “Y” grade only; may be repeated for total of 6 hours. Prerequisites: FAS 361; 3.00 GPA in major; approval of supervising faculty member before registration.

M FAS 431 Parent-Adolescent Relationships. (3)
fall
Examines strategies for implementing developmental assessments and observations of young children and their families. Cross-listed as SWU 437. Credit is allowed for only CDE 437 or SWU 437. Prerequisite: CDE 232 or SWU 301 (or their equivalents).

M CDE 498 Pro-Seminar. (1–7)
fall and spring

M CDE 499 Individualized Instruction. (3)
fall and spring

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

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

FILM AND MEDIA STUDIES

For information about courses numbered specifically listed in this catalog, see “Omnibus Courses;” page 63.

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

Film and Media Studies
480/965-6747
LL 641

Students interested in the BA in Film in the College of Liberal Arts and Sciences (CLAS) complete a concentration in film and media studies, and students accepted into the BA in Film in the Katherine K. Herberger College of Fine Arts complete a concentration in film and media production. The concentrations include core courses and electives in the areas of critical studies and film production.

The faculty in the CLAS include a range of nationally and internationally recognized film and media scholars, several of whom received their terminal degrees from the

COLLEGE OF LIBERAL ARTS AND SCIENCES

nations’s top film and media programs. Their expertise is reflected in a cutting-edge curriculum based on rigorous theoretical, historical, and critical models of film analysis as well as proficiency with newer technologies such as DVDs, Internet, video games, and Web sites.

Program Requirements (45 semester hours)

Core Requirements (24 semester hours). To provide students pursuing the BA in Film with a concentration in film and media studies with basic visual literacy and technical understanding, they take the following core courses:

- FMS 100 Introduction to Film. (3) fall and spring
- FMS 110 New Media and New Worlds. (3) fall and spring
- FMS 200 Film History. (3) General Studies: HU
- FMS 270 Race and Ethnicity in American Cinema. (3) fall and spring
- THE 201 Film: The Creative Process I. (3) General Studies: L
- THE 400 Focus on Film. (3)

Total: 24 semester hours

Film and Media Studies students select one area of emphasis (21 semester hours composed of 12 hours in one area of emphasis and three hours in each of the remaining areas). See an academic advisor for course lists within the following areas of emphasis:

- digital and interactive media
- media literacy and technology
- national and global media
- social identities in the media.

For more information, call the College of Liberal Arts and Sciences Film and Media Studies office at 480/965-6506.

Students interested in the BA in Film with a concentration in film and media production take core courses and electives in that area. For more information, visit the Katherine K. Herberger College of Fine Arts, GHALL 132, or call 480/965-5337.

FILM AND MEDIA STUDIES (FMS)

M FMS Note 1. With the exception of omnibus courses, all FMS courses have a teaching method of lecture, discussion, and screening.

M FMS Note 2. With the exception of FMS 490, all FMS courses numbered 300 and higher have a prerequisite of ENG 102 (or 105 or 108) and FMS 100 with a grade of “C” or higher.

M FMS 100 Introduction to Film. (3) fall and spring
Introduces the narrative structure, visual style, and cultural elements of film. Fee. See FMS Note 1.

M FMS 110 New Media and New Worlds. (3) fall and spring
Explores the cultural effects of new media technologies. Fee. See FMS Note 1. General Studies: L

M FMS 200 Film History. (3) spring
Introduces the technological, aesthetic, social, and economic aspects of international film history. Fee. See FMS Note 1. General Studies: HU

M FMS 270 Race and Ethnicity in American Cinema. (3) fall and spring
Examines how Hollywood shapes perceptions of race and ethnicity in American society. Cross-listed as CSH 270. Credit is allowed for only FMS 270 or CSH 270. Fee. See FMS Note 1. General Studies: HU, C

M FMS 294 Special Topics. (1–4) selected semesters

M FMS 300 Media and Cultural Studies. (3) once a year
The history of media and its cultural impact. Fee. See FMS Notes 1, 2. General Studies: HU

M FMS 340 Contemporary American Film and Popular Culture. (3) fall
Examines the representation of masculinity and the male body in film. Fee. See FMS Notes 1, 2. General Studies: HU

M FMS 350 Virtual Reality in Film and Media. (3) fall
Explores film treatment of the historical culture of Los Angeles. Fee. See FMS Notes 1, 2. General Studies: HU, C

M FMS 351 Digital, Cyberspace, and Information Cultures. (3) selected semesters
Examines modern cultural and digital technologies. Fee. See FMS Notes 1, 2. General Studies: L

M FMS 394 Special Topics. (1–4) selected semesters

M FMS 400 Los Angeles: Movies and Culture. (3) selected semesters
Explores film treatment of the historical culture of Los Angeles. Cross-listed as HUM 440. Credit is allowed for only FMS 440 or HUM 440. Fee. See FMS Notes 1, 2. General Studies: HU, C

M FMS 441 Global Cinema. (3) selected semesters
Examines the representation of masculinity and the male body in film. Fee. See FMS Notes 1, 2. General Studies: HU, C

M FMS 450 Technology, Culture, and Media. (3) spring
Studies the socio-political relationships among technology, culture, and media. Fee. See FMS Notes 1, 2. General Studies: L/HU

M FMS 460 Masculinity and Film. (3) spring
Explores the representation of masculinity and the male body in film. Fee. See FMS Notes 1, 2. General Studies: HU

M FMS 461 Film Theory and Criticism. (3) selected semesters
Examines major positions and issues in film theory from an historical perspective. Fee. See FMS Notes 1, 2. General Studies: HU

M FMS 480 Globalization, Technology, and Culture. (3) selected semesters
Explores how Hollywood shapes perceptions of race and ethnicity in American society. Cross-listed as CSH 270. Credit is allowed for only FMS 270 or CSH 270. Fee. See FMS Note 1. General Studies: HU, C

M FMS 484 Internship. (1–12) selected semesters
See FMS Notes 1, 2.

M FMS 490 Capstone Seminar. (3) once a year
Capstone seminar. Fee. See FMS Notes 1, 2. Prerequisites: major in Film and Media Studies; senior standing. General Studies: HU

M FMS 494 Special Topics. (1–4) selected semesters
Topics may include the following:
- Film Theory and Criticism. (3)
GEOGRAPHY—BA

A student choosing a BA degree in Geography may be interested in a liberal arts and sciences focus on the breadth of the field. A BA degree may also focus on a geographic region. In either case, the student crafts an individualized program of study in consultation with an advisor.

The BA degree consists of courses in core geographic knowledge (10–11 semester hours), core geographic skills (12 semester hours), regional course (three semester hours), and electives (12 semester hours), for a minimum of 37 semester hours in geography. At least 18 semester hours in geography must be in upper-division courses. The remaining hours are made up of electives from geography courses or related fields of study, chosen in consultation with an advisor.

Core Geographic Knowledge
GCU 102 Introduction to Human Geography SB .........................3
GCU 121 World Geography* SB, G ..................................4
GPH 111 Introduction to Physical Geography SQ  .................4
or GPH 411 Physical Geography (3)
Total ........................................................................................................10–11

* Completion of three semester hours of transfer course work can also be used to fulfill this requirement.

Core Geographic Skills
GCU 405 Quantitative Methods in Geography CS .................3
GCU 406 Geographic Research Methods L .........................3
GPH 371 Introduction to Cartography and Georepresentation CS, ......................................................3
GPH 401 Geographic Field Methods ........................................3
Total ........................................................................................................12

Geographic Region
Choose one of the courses below, in consultation with an advisor .........................................................3
GCU 322 Geography of U.S. and Canada SB, C (3)
GCU 323 Geography of Latin America SB, G (3)
GCU 325 Geography of Europe SB, G (3)
GCU 326 Geography of Asia SB, G (3)
GCU 327 Geography of Africa SB, G (3)
GCU 328 Geography of Middle East and North Africa SB, G (3)
GCU 332 Geography of Australia and Oceania SB, G (3)
GCU 344 Geography of Hispanic Americans SB, C (3)
GCU 421 Geography of Arizona and Southwestern United States SB, C (3)
GCU 423 Geography of South America SB, G (3)
GCU 424 Geography of Mexico and Middle America SB, G (3)
GCU 425 Geography of the Mexican American Borderland LS, SB, G (3)
GCU 426 Geography of Russia and Surroundings SB, G (3)
GCU 433 Geography of Southeast Asia (3)
GPH 433 Alpine and Arctic Environments G (3)

A student can design, in consultation with an advisor, a general BA degree in Geography. In addition, there are three cooperative programs whereby a student receives a BA degree in Geography and an emphasis in Asian Studies, Southeast Asian Studies, or Latin American Studies.

Asian and Southeast Asian Certificates. Students majoring in Geography may elect to pursue an Asian or Southeast Asian certificate. For more information, see “Asian Studies,” page 509, and “Southeast Asian Studies,” page 514.

Latin American Studies Emphasis. Students majoring in Geography may elect to pursue a Latin American studies concentration combining courses from the major with


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Meteorology–Climatology Concentration. A reading knowledge of either Spanish or Portuguese is required and a reading knowledge of the other language is suggested. The program must be approved by the Latin American Studies Center. See “Latin American Studies,” page 512, for more information.

GEOGRAPHY—BS

The BS degree consists of courses in core geographic knowledge (10–11 semester hours), core geographic skills (12 semester hours) and a geographic techniques course (from three to four semester hours), and electives (12 semester hours)—for a minimum of 37 semester hours in geography. At least 18 semester hours in geography must be in upper-division courses. The remaining hours are made up of electives from geography courses or related fields of study, chosen in consultation with an advisor.

Core Geographic Knowledge

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCU 102</td>
<td>Introduction to Human Geography SB</td>
<td>3</td>
</tr>
<tr>
<td>GCU 121</td>
<td>World Geography* SB, G</td>
<td>4</td>
</tr>
<tr>
<td>GPH 111</td>
<td>Introduction to Physical Geography SQ</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>or GPH 411 Physical Geography (3)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>10–11</strong></td>
</tr>
</tbody>
</table>

* Completion of three semester hours of transfer course work can also be used to fulfill this requirement.

Core Geographic Skills

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCU 495</td>
<td>Quantitative Methods in Geography CS</td>
<td>3</td>
</tr>
<tr>
<td>GCU 496</td>
<td>Geographic Research Methods L</td>
<td>3</td>
</tr>
<tr>
<td>GPH 371</td>
<td>Introduction to Cartography and Georepresentation CS</td>
<td>3</td>
</tr>
<tr>
<td>GPH 491</td>
<td>Geographic Field Methods</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Core Geographic Techniques

Choose one of the courses below, in consultation with an advisor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPH 370</td>
<td>Geographic Information Technologies</td>
<td>3</td>
</tr>
<tr>
<td>GPH 411</td>
<td>Geographics: Interactive and Animated Cartography and Geovisualization CS (3)</td>
<td>3</td>
</tr>
<tr>
<td>GPH 412</td>
<td>Physical Climatology</td>
<td>3</td>
</tr>
<tr>
<td>GPH 492</td>
<td>Health Geography</td>
<td>3</td>
</tr>
<tr>
<td>GPH 493</td>
<td>Urban Geography</td>
<td>3</td>
</tr>
<tr>
<td>GPH 494</td>
<td>Environmental Geography</td>
<td>3</td>
</tr>
<tr>
<td>GPH 495</td>
<td>Quantitative Methods in Geography CS</td>
<td>3</td>
</tr>
<tr>
<td>GPH 496</td>
<td>Geographic Research Methods L</td>
<td>3</td>
</tr>
<tr>
<td>GPH 411</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GPH 412</td>
<td>Physical Climatology</td>
<td>3</td>
</tr>
<tr>
<td>GPH 491</td>
<td>Geographic Field Methods</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

* Both PHY 121 and 122 must be taken to secure SG credit.

Mathematics and Physics-Related Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 270</td>
<td>Calculus with Analytic Geometry I MA</td>
<td>4</td>
</tr>
<tr>
<td>MAT 271</td>
<td>Calculus with Analytic Geometry II MA</td>
<td>4</td>
</tr>
<tr>
<td>MAT 272</td>
<td>Calculus with Analytic Geometry III MA</td>
<td>4</td>
</tr>
<tr>
<td>PHY 121</td>
<td>University Physics I: Mechanics SQ*</td>
<td>3</td>
</tr>
<tr>
<td>PHY 122</td>
<td>University Physics Laboratory I SQ*</td>
<td>1</td>
</tr>
<tr>
<td>PHY 131</td>
<td>University Physics II: Electricity and Magnetism SQ*</td>
<td>3</td>
</tr>
<tr>
<td>PHY 132</td>
<td>University Physics Laboratory II SQ*</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

* Both PHY 121 and 122 must be taken to secure SG credit.

Urban Studies Concentration. The required courses for the urban studies concentration are as follows:

Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCU 102</td>
<td>Introduction to Human Geography SB</td>
<td>3</td>
</tr>
<tr>
<td>GCU 121</td>
<td>World Geography* SB, G</td>
<td>4</td>
</tr>
<tr>
<td>GCU 495</td>
<td>Quantitative Methods in Geography CS</td>
<td>3</td>
</tr>
<tr>
<td>GCU 496</td>
<td>Geographic Research Methods L</td>
<td>3</td>
</tr>
<tr>
<td>GPH 111</td>
<td>Introduction to Physical Geography SQ</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>or GPH 411 Physical Geography (3)</td>
<td></td>
</tr>
<tr>
<td>GPH 370</td>
<td>Geographic Information Technologies CS</td>
<td></td>
</tr>
<tr>
<td>GPH 371</td>
<td>Introduction to Cartography and Georepresentation CS</td>
<td>3</td>
</tr>
<tr>
<td>GPH 491</td>
<td>Geographic Field Methods</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>26–27</strong></td>
</tr>
</tbody>
</table>

* Completion of three semester hours of transfer course work can also be used to fulfill this requirement.

Required Urban Studies Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCU 361</td>
<td>Urban Geography* SB</td>
<td>3</td>
</tr>
<tr>
<td>GCU 484</td>
<td>Human Geography Internship</td>
<td>3</td>
</tr>
<tr>
<td>or GPH 484</td>
<td>Internship (3)</td>
<td></td>
</tr>
</tbody>
</table>

* Both PHY 121 and 122 must be taken to secure SG credit.

Both PHY 131 and 132 must be taken to secure SG credit.
or one upper-division course outside the department in a related field of study chosen in consultation with an advisor (3)

Choose one of the courses below .....................................................3
GCU 351 Population Geography SB, G (3)
GCU 357 Social Geography SB (3)
GCU 364 Energy in the Global Arena SB, G (3)
GCU 441 Economic Geography SB (3)
GCU 442 Geographical Analysis of Transportation SB (3)
One upper-division GCU or GPH course chosen in consultation with an advisor (3)

Choose two of the courses below .....................................................6
GCU 359 Cities of the World I SB, G, H (3)
GCU 360 Cities of the World II SB, G (3)
GCU 444 Geographic Studies in Urban Transportation SB (3)
GCU 494 ST: Geography of Phoenix (3)

Urban studies total .................................................................15

MINOR IN GEOGRAPHY

A minor in Geography is awarded to students who complete a minimum of 18 hours in geography. A grade of “C” (2.00) or higher is required for all courses taken for the minor.

The following lower-division courses are required:

GCU 102 Introduction to Human Geography SB ...................3
GPH 111 Introduction to Physical Geography SQ ...............4
or GPH 411 Physical Geography (3)

Total .............................................................................................6–7

The remaining courses are selected in conjunction with an advisor. At least one course should be a geographic skill, these include: Geographic Information Technologies (GPH 370), Introduction to Cartography and Georepresentation (GPH 371), Air Photo Interpretation (GPH 372), Geographic Information Science I (GPH 373), or Geographic Field Methods (GPH 491). At least four courses should be upper-division courses in geography.

UNDERGRADUATE CERTIFICATE IN GEOGRAPHIC INFORMATION SCIENCE

This cross-disciplinary certificate is designed for undergraduates wishing to pursue a GIS-related career. The certificate is awarded to students completing the following 19 semester hours with a grade of “C” or higher.

Required courses

CSE 100 Principles of Programming with C++ CS ..........3
or CSE 110 Principles of Programming with Java CS (3)
GCU 495 Quantitative Methods in Geography CS ..........3
GPH 370 Geographic Information Technologies CS ..........3
GPH 373 Geographic Information Science I CS ..........4
GPH 473 Geographic Information Science II CS ..........3

Elective Courses

Choose one of the courses below .....................................................3
ABS 485 GIS in Natural Resources (3)
ABS 586 Remote Sensing in Environmental Resources (4)
CSE 181 Applied Problem Solving with Visual BASIC CS (3)
GCU 361 Urban Geography SB (3)
GCU 441 Economic Geography SB (3)
GCU 442 Geographical Analysis of Transportation SB (3)
GCU 484 Human Geography Internship (3)
GPH 371 Introduction to Cartography and Georepresentation CS (3)
GPH 372 Air Photo Interpretation (3)
GPH 471 Geographics: Interactive and Animated Cartography and Geovisualization CS (3)
GPH 481 Environmental Geography (3)
GPH 483 Geographic Information Analysis (3)
GPH 484 Internship: GIS based (3)
PLB 434 Landscape Ecological Analysis and Modeling (3)

Total ...............................................................................................19

BIS CONCENTRATIONS

Five concentrations in Geography (geography, environmental geography, geographical information science, geography for business, and international geography) are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Two double concentrations are also available: the global family (in conjunction with family resources and human development) and environmental science (in conjunction with plant biology). Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

SECONDARY EDUCATION—BAE

This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education (Geography) have an advisor in the College of Education and an advisor within the Department of Geography.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

Academic Specialization ITC Admission Requirements.

At least three required courses in the academic specialization must be completed with a grade of “C” (2.00) or higher before applying to the ITC professional program.

Geography. The major teaching field consists of 30 semester hours and six hours in teaching methods. A grade of “C” (2.00) or higher is required in all academic specialization courses. Required major courses are as follows:

GCU 102 Introduction to Human Geography SB ...............3
GCU 121 World Geography SB, G ......................................4
GCU 141 Introduction to Economic Geography SB, G ........3
or GCU 322 Geography of U.S. and Canada SB, C (3)
GCU 351 Population Geography SB, G (3)
or GCU 361 Urban Geography SB (3)
GPH 111 Introduction to Physical Geography SQ ...............4

GPH 210 Society and Environment G ..................................................3
or GPH 211 Landform Processes L (3)
or GPH 212 Introduction to Meteorology SQ (3)
and GPH 214 Introduction to Meteorology Lab SQ (1)
or GPH 314 Global Change HL, G (3)
Electives* ................................................................. 12–13
Minimum total ................................................................. 30

1 Both GPH 212 and 214 must be taken to secure SQ credit.
2 Electives must be upper-division geography courses chosen in conjunction with an advisor to reach the 30-semester-hour major requirement.

Teaching Methods
GCU 414 Teaching Geography Standards .....................................3
SED 480 Special Methods of Teaching Social Studies .................3
or GCU 494 ST: Geography Methods .......................................
Total .......................................................................................6

CULTURAL GEOGRAPHY (GCU)
For more GCU courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D
(Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.
M GCU 102 Introduction to Human Geography. (3)
fall, spring, summer
Systematic study of human use of the earth. Spatial organization of economic, social, political, and perceptual environments. Fee.
General Studies: SB, G
M GCU 121 World Geography. (4)
fall, spring, summer
Description and analysis of areal variations in social, economic, and political phenomena in major world regions.
General Studies: SB, G
M GCU 141 Introduction to Economic Geography. (3)
fall
Production, distribution, and consumption of various types of commodities of the world and relationships to the activities of humans.
General Studies: SB, G
M GCU 200 Orientation to Geography. (1)
fall
Basic introduction to the Department of Geography faculty, undergraduate graduation requirements, and possible jobs and skills in geography. Cross-listed as GPH 200. Credit is allowed for only GCU 200 or GPH 200.
M GCU 240 Introduction to Southeast Asia. (3)
fall and spring
Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia. Cross-listed as ASB 240/HST 240/POS 240/REL 240. Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240.
General Studies: HU/SB, G
M GCU 253 Introduction to Cultural and Historical Geography. (3)
selected semesters
Cultural patterns, including such phenomena as language, religion, and various aspects of material culture. Origins and diffusion and division of the world into cultural areas.
General Studies: SB, G
M GCU 294 Special Topics. (4)
one a year
Topics include global awareness.
M GCU 322 Geography of U.S. and Canada. (3)
fall
Spatial distribution of relevant physical, economic, and cultural phenomena in the United States and Canada.
General Studies: SB, C
M GCU 323 Geography of Latin America. (3)
fall and spring
Spatial distribution of relevant physical, economic, and cultural phenomena in South, Middle, and Caribbean America.
General Studies: SB, G
M GCU 325 Geography of Europe. (3)
spring
Broad and systematic overview of Europe, emphasizing physical, economic, and cultural phenomena.
General Studies: SB, G
M GCU 326 Geography of Asia. (3)
one a year
Spatial distribution of relevant physical, economic, and cultural phenomena in Asia, excluding the former Soviet Union.
General Studies: SB, G
M GCU 327 Geography of Africa. (3)
selected semesters
Spatial distribution of relevant physical, economic, and cultural phenomena in Africa.
General Studies: SB, G
M GCU 328 Geography of Middle East and North Africa. (3)
selected semesters
Spatial distribution of relevant physical, economic, and cultural phenomena in the Middle East and North Africa. Prerequisite: GCU 121 or instructor approval.
General Studies: SB, G
M GCU 332 Geography of Australia and Oceania. (3)
selected semesters
Spatial distribution of relevant physical, economic, and cultural phenomena in Australia, New Zealand, and Pacific Islands.
General Studies: SB, G
M GCU 344 Geography of Hispanic Americans. (3)
fall
Examines the homelands, migrations, settlements, landscapes, roles, and selected cultural traditions of Hispanic Americans.
General Studies: SB, C
M GCU 350 The Geography of World Crises. (3)
fall and spring
Contemporary world crises viewed from a perspective of geographic concepts and techniques.
General Studies: SB, G
M GCU 351 Population Geography. (3)
fall
Demographic patterns; spatial, temporal, and structural investigation of the relationship of demographic variables to cultural, economic, and environmental factors.
General Studies: SB, G
M GCU 352 Political Geography. (3)
selected semesters
Relationship between the sociophysical environment and the state.
General Studies: SB, G
M GCU 357 Social Geography. (3)
once a year
Environmental perception of individuals and groups. Stresses the spatial aspect of social and physical environments.
General Studies: SB
M GCU 359 Cities of the World I. (3)
fall
Historical evolution of urban patterns and structures in the Middle East, India, Southeast Asia, China, Japan, and Europe.
General Studies: SB, G, H
M GCU 360 Cities of the World II. (3)
spring
Historical evolution of urban patterns and structures in Latin America, North America, Sub-Saharan Africa, and Australasia.
General Studies: SB, G
M GCU 361 Urban Geography. (3)
fall and spring
External spatial relations of cities, internal city structure, and spatial aspects of urban problems in various parts of the world, particularly in the United States. Fee.
General Studies: SB
DEPARTMENT OF GEOGRAPHY

M GCU 364 Energy in the Global Arena. (3)  
fall, spring  
Production, transportation, and consumption of energy, emphasizing the electric power industry and its environmental problems.  
General Studies: SB, G

M GCU 394 Special Topics. (1–4)  
fall and spring  
Topics may include the following:  
• Geography of the K–12 Classroom. (3)  
• Geography Methods. (3)  
• Geography of Phoenix. (3)  
General Studies: SB

M GCU 414 Teaching Geography Standards. (3)  
fall and summer  
Introduces Arizona Geography Standards for K–12 educators, emphasizing exciting curricula and illustrated with best practices by master teachers. Internet.

M GCU 421 Geography of Arizona and Southwestern United States. (3)  
fall  
Geography of the Southwest with an emphasis on Arizona. Divided into physical geography, history, people, and economy.  
General Studies: SB, C

M GCU 423 Geography of South America. (3)  
selected semesters  
Prerequisite: GCU 323 or instructor approval.  
General Studies: SB, G

M GCU 424 Geography of Mexico and Middle America. (3)  
selected semesters  
Central America and Mexico. Prerequisite: GCU 323 or instructor approval.  
General Studies: SB, G

M GCU 425 Geography of the Mexican American Borderland. (3)  
spring  
Geography of a binational and bicultural region. Examines settlement, boundary issues, ethnic subregions, population change, industrial development, and urban growth. Field trips. Fee.  
General Studies: L/SB, G

M GCU 426 Geography of Russia and Surroundings. (3)  
selected semesters  
Examines the geography of Russia and other post-Soviet states. Prerequisite: GCU 121 or instructor approval.  
General Studies: SB, G

M GCU 432 Geography of China. (3)  
selected semesters  
Examines the physical, economic, cultural, social, demographic, agricultural, political, historical, and environmental aspects of the geography of China. Lecture, discussion. Prerequisite: GCU 326 or instructor approval.  
General Studies: SB, G

M GCU 433 Geography of Southeast Asia. (3)  
selected semesters  
Examines the biophysical and social features of Southeast Asian nations and peoples. Prerequisite: GCU 326 or instructor approval.  
General Studies: SB, G

M GCU 441 Economic Geography. (3)  
once a year  
Spatial distribution of primary, secondary, and tertiary economic and production activities. Prerequisite: GCU 141 or instructor approval.  
General Studies: SB

M GCU 442 Geographical Analysis of Transportation. (3)  
selected semesters  
Networks, modes, economics, and flows at the urban, national, and international scales. Fee. Prerequisite: GCU 141 or 441.  
General Studies: SB

M GCU 444 Geographic Studies in Urban Transportation. (3)  
selected semesters  
Current urban transportation issues in metropolitan Phoenix. Lecture, team project. Fee. Prerequisite: GCU 361.  
General Studies: SB

M GCU 453 Recreational Geography. (3)  
selected semesters  
Examines problems surrounding the organization and use of space for recreation. Introduces geographic field survey methods of data collection and analysis. Possible Saturday field trips.  

M GCU 455 Historical Geography of U.S. and Canada. (3)  
selected semesters  
Geographical perspective on the evolution of the United States and Canada from pre-Columbian times to early 20th century.  
General Studies: SB, H

M GCU 474 Public Land Policy. (3)  
selected semesters  
Geographic aspects of federal public lands, policy, management, and issues. Emphasizes western wilderness and resource development problems.  
General Studies: SB

M GCU 484 Human Geography Internship. (3)  
fall and spring  

M GCU 494 Special Topics. (1–4)  
one a year  
Topics may include the following:  
• Geography of the K–12 Classroom. (3)  
• Geography Methods. (3)  
• Geography of Phoenix. (3)  
General Studies: SB

M GCU 495 Quantitative Methods in Geography. (3)  
fall and spring  
Statistical techniques applied to the analysis of spatial distributions and relationships. Introduces models and theory in geography. Fee. Prerequisite: MAT 119.  
General Studies: CS

M GCU 496 Geographic Research Methods. (3)  
fall and spring  
Scientific techniques used in geographic research. Fee. Prerequisites: GCU 495; GPH 371, 491.  
General Studies: L

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

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

PHYSICAL GEOGRAPHY (GPH)

M GPH 111 Introduction to Physical Geography. (4)  
fall, spring, summer  
Spatial and functional relationships among climates, landforms, soils, water, and plants. Credit is allowed for only GPH 111 or 417. 3 hours lecture, 3 hours lab, field trips. Fee.  
General Studies: SQ

M GPH 200 Orientation to Geography. (1)  
fall  
Basic introduction to the Department of Geography faculty, undergraduate graduation requirements, and possible jobs and skills in geography. Cross-listed as GCU 200. Credit is allowed for only GCU 200 or GPH 200.

M GPH 210 Society and Environment. (3)  
fall and spring  
Examines the interaction between social processes, key environmental issues, and nature’s role as a resource at global and regional scales.  
General Studies: G

M GPH 211 Landform Processes. (3)  
once a year  
Geographic characteristics of landforms and earth-surface processes, emphasizing erosion, transportation, deposition, and implications for human management of the environment. Fee. Prerequisites: ENG 101 (or 105); GPH 111.  
General Studies: L

M GPH 411 Historical Geography of the United States and Canada. (3)  
selected semesters  
Geographical perspective on the evolution of the United States and Canada from pre-Columbian times to early 20th century.  
General Studies: SB, H

M GPH 474 Public Land Policy. (3)  
selected semesters  
Geographic aspects of federal public lands, policy, management, and issues. Emphasizes western wilderness and resource development problems.  
General Studies: SB

M GCU 484 Human Geography Internship. (3)  
fall and spring  

M GCU 494 Special Topics. (1–4)  
one a year  
Topics may include the following:  
• Geography of the K–12 Classroom. (3)  
• Geography Methods. (3)  
• Geography of Phoenix. (3)  
General Studies: SB

M GCU 495 Quantitative Methods in Geography. (3)  
fall and spring  
Statistical techniques applied to the analysis of spatial distributions and relationships. Introduces models and theory in geography. Fee. Prerequisite: MAT 119.  
General Studies: CS

M GCU 496 Geographic Research Methods. (3)  
fall and spring  
Scientific techniques used in geographic research. Fee. Prerequisites: GCU 495; GPH 371, 491.  
General Studies: L

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

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

PHYSICAL GEOGRAPHY (GPH)

M GPH 111 Introduction to Physical Geography. (4)  
fall, spring, summer  
Spatial and functional relationships among climates, landforms, soils, water, and plants. Credit is allowed for only GPH 111 or 417. 3 hours lecture, 3 hours lab, field trips. Fee.  
General Studies: SQ

M GPH 200 Orientation to Geography. (1)  
fall  
Basic introduction to the Department of Geography faculty, undergraduate graduation requirements, and possible jobs and skills in geography. Cross-listed as GCU 200. Credit is allowed for only GCU 200 or GPH 200.

M GPH 210 Society and Environment. (3)  
fall and spring  
Examines the interaction between social processes, key environmental issues, and nature’s role as a resource at global and regional scales.  
General Studies: G

M GPH 211 Landform Processes. (3)  
once a year  
Geographic characteristics of landforms and earth-surface processes, emphasizing erosion, transportation, deposition, and implications for human management of the environment. Fee. Prerequisites: ENG 101 (or 105); GPH 111.  
General Studies: L

M GPH 212 Introduction to Meteorology. (3) fall
Fundamentals of weather and climate, including basic atmospheric processes and elements. Students whose curricula require a laboratory course must also register for GPH 214. Prerequisite: GPH 111 or instructor approval. General Studies: SQ (if credit also earned in GPH 212)

M GPH 214 Introduction to Meteorology Laboratory. (1) fall
Introduces basic meteorological/climatological data and measurements. Suggested concurrent enrollment in GPH 212. 3 hours lab. General Studies: SQ (if credit also earned in GPH 212)

M GPH 215 Introduction to Climatology Laboratory. (1) spring
Fundamentals of meteorological/climatological data and interpretation. Recommended for meteorology/climatology program students. May be taken concurrently with GPH 213. Prerequisite: instructor approval. General Studies: SG (if credit also earned in GPH 213)

M GPH 216 Introduction to Climatology. (3) selected semesters
Introduces basic meteorological/climatological data and measurements. Suggested concurrent enrollment in GPH 212. 3 hours lab. General Studies: SQ (if credit also earned in GPH 212)

M GPH 217 Maps and Map Reading. (3) selected semesters

M GPH 218 Geographic Information Technologies. (3) fall and spring
Introduces modern geographic information technologies, including cartography, GIS, remote sensing, global positioning systems, and statistical analyses. Lecture, lab. Fee. General Studies: CS

M GPH 271 Maps and Map Reading. (3) selected semesters

M GPH 314 Global Change. (3) fall and spring
Response of Earth's natural systems (atmosphere, hydrosphere, lithosphere, biosphere) to past environmental change, and effects of potential future changes. General Studies: HU, G

M GPH 370 Geographic Information Technologies. (3) fall and spring
Introduces modern geographic information technologies, including cartography, GIS, remote sensing, global positioning systems, and statistical analyses. Lecture, lab. Fee. General Studies: CS

M GPH 371 Introduction to Cartography and Georepresentation. (3) fall and spring
Study and creation of maps. Fundamental mapping principles (projection, scale, generalization, symbolization) and computer-based cartographic production. Lecture, lab. Fee. Prerequisite: GPH 111. General Studies: CS

M GPH 372 Air Photo Interpretation. (3) once a year
Subset, remote sensing, includes photography, films, aerial geometry, image components, stereoscopy, photogrammetry, ground truthing; interpret physical, cultural, economic, intelligence information. Prerequisite: GPH 211 or a course in Cultural Geography (GCU) or instructor approval.

M GPH 373 Geographic Information Science I. (4) fall and spring
History and basic aspects of GIS, including map and data file structure, conversions, and synthesis with a computerized environment. Fee. Prerequisite: GPH 370. General Studies: CS

M GPH 381 Geography of Natural Resources. (3) once a year
Nature and distribution of natural resources and the problems and principles associated with their use. General Studies: G

M GPH 384 Special Topics. (1–4) fall and spring
Open to students qualified to pursue independent studies. Possible field trips. Prerequisite: instructor approval.

M GPH 401 Topics in Physical Geography. (1–3) selected semesters
Open to students qualified to pursue independent studies. Possible field trips. Prerequisite: instructor approval.

M GPH 402 Service Learning. (3) fall and spring
K–12 tutoring and mentoring internship related to academic course work in physical geography. Requires weekly reflective reading and writing. May be repeated for credit. Internship. Fee. Pre- or corequisite: GPH 111. General Studies: C

M GPH 405 Energy and Environment. (3) spring
Sources, regulatory and technical controls, distribution, and consequences of the supply and human use of energy. Fee. Prerequisite: a course in physical or life sciences or instructor approval.

M GPH 409 Sympathetic Meteorology I. (4) selected semesters
Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis. Prerequisites: MAT 270; PHY 131, 132.

M GPH 410 Sympathetic Meteorology II. (4) selected semesters
Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis. Prerequisite: GPH 409.

M GPH 411 Physical Geography. (3) selected semesters
Introduces physiography and the physical elements of the environment. Credit is allowed for only GPH 411 or 111. Field trips.

M GPH 412 Physical Climatology. (3) once a year
Physical processes in the earth-atmosphere system on regional and global scales; concepts and analysis of energy, momentum, and mass balances. Prerequisites: both GPH 212 and 213 or only instructor approval.

M GPH 413 Meteorological Instruments and Measurement. (3) once a year
Design and operation of ground-base and aerological weather measurement systems. Collection, reduction, storage, retrieval, and analysis of data. Field trips. Prerequisites: both GPH 212 and 213 or only instructor approval.

M GPH 414 Climate Change. (3) once a year
Survey of three climate research areas: paleoclimatology, theories (e.g., greenhouse warming), numerical modeling. Prerequisite: GPH 212 or instructor approval. General Studies: G

M GPH 415 Synoptic Meteorology I. (4) selected semesters
Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis. Prerequisite: GPH 409.

M GPH 416 Synoptic Meteorology II. (4) selected semesters
Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis. Prerequisite: GPH 409.

M GPH 417 Introduction to Climatology. (3) once a year
Diagnostic techniques and synoptic forecasting. Includes techniques of weather analysis, map interpretation, and satellite and radar analysis. Prerequisites: GPH 409.

M GPH 418 Landforms of the Western United States. (3) selected semesters
Studies landforms and geomorphic processes in the western United States, including lecture, topographical maps, aerial photographs, satellite imagery, and field trips. Lecture, critical inquiry, laboratory, field work. Fee. Prerequisites: GPH 211 (or its equivalent); a General Studies L course. General Studies: L

M GPH 422 Plant Geography. (3) once a year
Plant communities of the world and their interpretation, emphasizing North American plant associations. Cross-listed as PLB 422. Credit is allowed for only GPH 422 or PLB 422. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 or only GPH 111.

M GPH 433 Alpine and Arctic Environments. (3) selected semesters
Regional study of advantages and limitations of the natural environment upon present and future problems involving resource distribution, human activities, and regional and interregional adjustments. Field trips. Prerequisite: GPH 111 or instructor approval. General Studies: G

M GPH 471 Geographics: Interactive and Animated Cartography and Geovisualization. (3) selected semesters
Advanced cartography, stressing influence and application of the computer on geographic representation. Emphasizes creation of maps for the Internet. Lecture, lab. Fee. Prerequisite: GPH 371 or instructor approval. General Studies: CS
M GPH 474 Dynamic Meteorology I. (3)
selected semesters
Large-scale atmospheric motion, kinematics, Newton's laws, wind equation, baroclinics, vorticity, and the midlatitude depression. Prerequisites: GPH 213, 215; MAT 271; PHY 131, 132.

M GPH 475 Dynamic Meteorology II. (3)
selected semesters
Topics in climate dynamics. General circulation, numerical modeling, teleconnection phenomena, and surface-atmosphere interaction. Prerequisite: GPH 474 or instructor approval.

M GPH 481 Environmental Geography. (3)
selected semesters
Problems of environmental quality, including uses of spatial analysis, research design, and field work in urban and rural systems. Field trips. Prerequisite: instructor approval.

M GPH 483 Geographic Information Analysis. (3)
selected semesters
Basics of spatial data analysis. Topics include point pattern analysis, spatial autocorrelation, spatial regression, and kriging. Lecture, lab, Fee. Prerequisites: both one 200-level or above course in geography or biology or plant biology or geology or planning and one basic statistics course (GCU 495).

M GPH 484 Internship. (1–12)
selected semesters
Topics may include the following:
- GIS-Based. (3)
- Physical Geography Internship. (3)
- Assist in teaching sixth-grade students a simplified version of GPH 111 using hands-on activities.

M GPH 491 Geographic Field Methods. (3)
once a year
Field techniques, including use of aerial photos, large-scale maps, and fractional code system of mapping; urban and rural field analysis to be done off campus. Fee. Prerequisites: GCU 102, 121; GPH 111.

M GPH 494 Special Topics. (1–4)
selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
Graduate-Level Courses. For information about courses numbered from 500 to 799, see the Graduate Catalog, or access www.asu.edu/catalog on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.
Graduate Programs

Both GLG 102 and 104 must be taken to secure SQ credit.

GLG 310 Structural Geology .........................................................3
GLG 104 Introduction to Geology II—Laboratory
GLG 103 Introduction to Geology I—Laboratory
GLG 102 Introduction to Geology II (Historical) .........................................................4
or MAT 274 Elementary Differential Equations MA (3)

1 Both PHY 121 and 122 must be taken to secure SQ credit.
2 Both PHY 131 and 132 must be taken to secure SQ credit.

MAT 290 Calculus I and MAT 291 Calculus II may be substituted for MAT 270, 271, and 272.

Minor in Geological Sciences

A minor in Geological Sciences is awarded to students who complete a minimum of 21 hours of geological science courses. Required courses are as follows:

GLG 101 Introduction to Geology I (Physical) SQ 1 G .................................................3
GLG 102 Introduction to Geology II (Historical) SG 2 H .................................................3
GLG 103 Introduction to Geology I—Laboratory SQ 1 ....................................................1
GLG 104 Introduction to Geology II—Laboratory SG 2 ....................................................1
GLG 310 Structural Geology .........................................................................................3
GLG 321 Mineralogy ......................................................................................................3
GLG 400 Geology Colloquium .....................................................................................1

1 Both GLG 101 and 103 must be taken to secure SQ credit.
2 Both GLG 102 and 104 must be taken to secure SG credit.

The remaining six semester hours may be chosen among other upper-division geological sciences courses, except GLG 300 and 400, after consultation with a departmental advisor.

BIS Concentration

A concentration in geological sciences is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

Graduate Programs

The faculty in the Department of Geological Sciences offer programs leading to the degrees of Master of Natural Science, MS, and PhD. See the Graduate Catalog for requirements.

Geological Sciences (GLG)

For more GLG courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M GLG 101 Introduction to Geology I (Physical). (3) fall, spring, summer
Basic principles of geology, geochemistry, and geophysics. Rocks, minerals, weathering, earthquakes, mountain building, volcanoes, water, and glaciers. Possible weekend field trips.
General Studies: SQ (if credit also earned in GLG 103), G

M GLG 102 Introduction to Geology II (Historical). (3) spring
Basic principles of applied geology and the use of these principles in the interpretation of geologic history. Possible weekend field trips.
Fee. Prerequisite: GLG 101.
General Studies: SG (if credit also earned in GLG 104), H

M GLG 103 Introduction to Geology I—Laboratory. (1) fall, spring, summer
3 hours lab, some field trips. Fee. Corequisite: GLG 101.
General Studies: SQ (if credit also earned in GLG 101)

M GLG 104 Introduction to Geology II—Laboratory. (1) spring
Laboratory techniques involving map interpretation, cross sections, and fossils. 3 hours lab, possible field trips. Prerequisite: GLG 103 (or its equivalent). Corequisite: GLG 102.
General Studies: SG (if credit also earned in GLG 102)

M GLG 105 Introduction to Planetary Science. (4) spring
Solar system objects and their geologic evolution, surfaces, interiors, and atmospheres; weekly laboratory for data analysis and experiments. Lecture, lab, weekend field trip.
General Studies: SQ

M GLG 110 Geologic Disasters and the Environment. (3) fall
Geological studies as they apply to interactions between humans and earth. Includes geological processes and hazards, resources, and global change.
General Studies: SG (if credit also earned in GLG 111), G

M GLG 111 Geologic Disasters Laboratory. (1) fall
Basic geological processes and concepts. Emphasizes geology-related environmental problems. Case histories, field studies, lab.
Corequisite: GLG 110.
General Studies: SG (if credit also earned in GLG 110)

M GLG 294 Special Topics. (1–4) selected semesters
Topics may include the following:
• Geology of the Planets
Fee.

M GLG 300 Geology of Arizona. (3) once a year
Basic and historical geology, fossils, mining, energy resources, environmental problems, landscape development, and meteorites, cast in examples from Arizona. Majors who have taken GLG 101 for credit may not enroll.

M GLG 304 Geology of the Grand Canyon. (2) selected semesters
Reviews the discovery, history, origin, and geology of the Grand Canyon of the Colorado River in Arizona. Requires 6-day field trip down the river (first 6 days after commencement in May) at student’s expense. Requires field research and term paper on trip.

M GLG 310 Structural Geology. (3) fall
Geologic structures and the mechanical processes involved in their formation. 2 hours lecture, 3 hours lab. Possible field trips. Fee. Prerequisites: GLG 101; MAT 270 (or 290).

M GLG 321 Mineralogy. (3) spring
Crystal chemistry, crystallography, mineral identification, origin and occurrence of minerals, systematic mineralogy. 2 hours lecture, 3 hours lab, possible field trips. Prerequisites: CHM 113; MAT 270 (or 290), Pre- or corequisite: CHM 116.
M GLG 325 Oceanography. (3) fall
Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans. Cross-listed as BIO 325. Credit is allowed for only GLG 325 or BIO 325. Prerequisite: BIO 101 or GLG 101 or instructor approval.

M GLG 362 Geomorphology. (3) selected semesters
Land forms and processes that create and modify them. Laboratory and field study of physiographic features. 2 hours lecture, 3 hours lab, possible weekend field trips. Prerequisite: GLG 101. Pre- or corequisite: GLG 310.

M GLG 400 Geology Colloquium. (1) fall and spring
Presentation of recent research by faculty and guests. Requires written assignments. 1 semester hour required for Geological Sciences majors; may be repeated for a total of 2 semester hours. Prerequisite: 2 courses in the department or instructor approval.

M GLG 402 Service Learning. (3) fall among K–12 tutoring and mentoring internship related to academic course work in geological sciences. Requires weekly reflective reading and writing. May be repeated for credit. Internship. Fee. Pre- or corequisites: GLG 101, 103.

M GLG 404 Fundamentals of Planetary Geology. (3) fall
Surveys planetary topics, including impacts, tectonics, and volcanism on planetary objects, and use of spacecraft data, including geological mapping. Lectures, problem sets, weekend field trip. Fee. Prerequisite: Geology major or degree or instructor approval.

M GLG 405 Geology of the Moon. (3) selected semesters
Current theories of the origin and evolution of the moon through photogeological analyses and consideration of geochemical and geophysical constraints. Possible field trips to examine Arizona geology. Fee. Prerequisite: GLG 105 or instructor approval.

M GLG 406 Geology of Mars. (3) selected semesters
Geological evolution of Mars through analyses of spacecraft data, theoretical modeling, and study of terrestrial analogs; emphasizes current work. Possible field trips to examine Arizona geology. Fee. Prerequisite: GLG 105 or instructor approval.

M GLG 410 Computers in Geology. (3) fall
Geological computer skills, including data processing, visualization, presentation, numerical analysis, software and hardware applications. 2 hours lecture, 3 hours lab. Prerequisites: both GLG 101 and an upper-division course in geology or only instructor approval.

M GLG 412 Geotectonics. (3) selected semesters
Earthquakes, earth’s interior, formation of oceanic and continental crust, and plate tectonics. Emphasizes current work. Prerequisite: GLG 310.

M GLG 416 Field Geophysics. (3) spring
Methods of applied geophysical exploration; seismic refraction, gravity, electrical resistivity, geomagnetics. Includes survey planning, data acquisition, processing, analysis, and interpretation. Lecture, field exercises. Prerequisite: a course in geology or instructor approval.

M GLG 418 Geophysics. (3) fall
Solid earth geophysics; geomagnetism, gravity, seismology, heat flow. Emphasizes crust and upper mantle. Prerequisites: a combination of GLG 310 and MAT 272 and PHY 131 or only instructor approval.

M GLG 419 Geodynamics. (3) selected semesters
Emphasizes application of continuum principles to geothermal problems, including lithospheric stresses, heat transfer, fluid mechanics, and rock rheology. Prerequisite: PHY 131.

M GLG 420 Volcanology. (3) once a year
Distribution of past and present volcanism, types of volcanic activity, mechanism of eruption, form and structure of volcanoes, and geochemistry of volcanic activity. Possible weekend field trips. Fee. Prerequisite: GLG 424.

M GLG 424 Petrology. (3) fall
Origin of igneous and metamorphic rocks. Optical mineralogy, hand specimen identification, and thin-section analysis. 2 hours lecture, 3 hours lab, possible weekend field trips. Fee. Prerequisite: GLG 321.

M GLG 430 Paleontology. (3) fall
Introduces concepts and analytical techniques in biogeology, paleobiology, paleoecology, and paleoenvironmental reconstruction from the fossil record. 2 hours lecture, 3 hours lab. Fee. Prerequisites: both GLG 102 and MAT 270 or 290 or only instructor approval.

M GLG 435 Sedimentology. (3) spring
Origin, transport, deposition, and diagenesis of sediments and sedimentary rocks. Physical analysis, hand specimen examination, and interpretation of rocks and sediments. 2 hours lecture, 3 hours lab, possible weekend field trips. Fee. Prerequisites: GLG 102, 321.

M GLG 441 Ore Deposits. (3) selected semesters
Origin, occurrence, structure, and mineralogy of ore deposits. Possible weekend field trips. Fee. Prerequisite: GLG 424 or instructor approval.

M GLG 451 Field Geology I. (3) spring

M GLG 452 Field Geology II. (3) summer

M GLG 455 Advanced Field Geology. (3–4) once a year
Geologic mapping in igneous, sedimentary, and metamorphic terrains of the Basin and Range province of Arizona. May be repeated for credit. Weekend field trips. Fee. Prerequisite: instructor approval.

M GLG 456 Cordilleran Regional Geology. (3) selected semesters
Systematic coverage through space and time of the geological development of western North America, emphasizing the western United States. Fee. Prerequisite: senior major or graduate student in Geological Sciences or instructor approval.

M GLG 460 Astrobiology. (3) fall and spring
Origin, early evolution, distribution, and future of life on Earth and elsewhere in the cosmos. May be repeated for credit. Lecture, discussion, video conferences, possible field trips. Cross-listed as AST 460/BIO 460/CHM 483/MIC 475. Credit is allowed for only AST 460 or BIO 460 or CHM 483 or GLG 460 or MIC 475. Prerequisite: instructor approval.

M GLG 461 Geomicrobiology. (3) spring
Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and minerals. Cross-listed as MIC 461. Credit is allowed for only GLG 461 or MIC 461. Prerequisites: introductory courses in chemistry and microbiology (or geological sciences); instructor approval.

M GLG 470 Hydrogeology. (3)  
Spring  
Geology of groundwater occurrence, aquifer and well hydraulics, water chemistry and quality, contaminant remediation. Emphasizes quantitative methods. Prerequisites: GLG 101 (or 103); MAT 270; PHY 121.

M GLG 481 Geochemistry. (3)  
Spring  
Origin and distribution of the chemical elements. Geochemical cycles operating in the earth’s atmosphere, hydrosphere, and lithosphere. Cross-listed as CHM 481. Credit is allowed for only CHM 481 or GLG 481. Prerequisite: CHM 341 (or 346) or GLG 321.

M GLG 484 Internship. (1–4)  
Selected semesters

M GLG 485 Meteorites and Cosmochemistry. (3)  
Selected semesters  
Chemistry of meteorites and their relationship to the origin of the earth, solar system, and universe. Cross-listed as CHM 485. Credit is allowed for only CHM 485 or GLG 485. Prerequisite: CHM 341 or 346.

M GLG 490 Topics in Geology. (1–3)  
Fall, spring, summer  
Special topics in a range of fields in geology. May be repeated for credit. Fee. Prerequisite: instructor approval.

M GLG 495 Undergraduate Thesis. (3)  
Fall, spring, summer  
Guided research culminating in the completion and presentation of an undergraduate thesis based on supervised research. Independent study. Prerequisite: GLG 499 (3 hours); formal conference with instructor; instructor and department chair approval.

M GLG 499 Individualized Instruction. (1–3)  
Selected semesters

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

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

The Student Services Building  
Tim Trumble photo

School of Global Studies  
www.asu.edu/clas/globalstudies  
480/727-8286  
COOR 5634

David Jacobson, Director
CORE FACULTY
Professors: Abbott, Hechter, Jacobson, Thomas, Webster, West
Associate Professors: Cruz-Torres, Henn, Taylor, Warner
Assistant Professors: Duncan, McElwee, Peskin, Wang
Visiting Assistant Professor: Schneider

GLOBAL STUDIES—BA
The BA in Global Studies requires 45 semester hours in global studies and track courses. At least 18 hours must be in the upper division.

Required courses are as follows:

SGS 101 Thinking Globally: The Individual and Authority ........3
SGS 102 Thinking Globally: Technology and Nature in World Settings.................................................................3
SGS 103 Contemporary Global Trends SB, G ...................................3
SGS 394 ST: Professional Development (career courses) ..........6
SGS 394 ST: Research Methods ..................................................3
SGS 484 Study Abroad/Internship ...............................................6
SGS 494 ST: Capstone .................................................................6
Total ........................................................................................30

Students must select a track from the following options: Asian studies, governance, Latin American studies, migration, Russian and East European studies, Southeast Asian studies, and urban systems and natural resources* .......15

Program total ........................................................................45

* At least nine semester hours must be in the upper division, and a three-semester-hour statistics course is encouraged.

All School of Global Studies students must obtain a cumulative GPA of 2.50 or higher with a minimum grade of “C” in all global studies and track courses. Students who enter as freshmen are required to enroll in two sequential learning community courses (SGS 101, 102, and 103).

SCHOOL OF GLOBAL STUDIES (SGS)

M SGS 101 Thinking Globally: The Individual and Authority. (3)  
Fall  
Examines the changing notions of the individual and authority over history. Lecture, discussion.

M SGS 102 Thinking Globally: Technology and Nature in World Settings. (3)  
Fall  
Examines changing interactions between humans and nature, geographic systems, global demography, and environment. Lecture, discussion.
M SGS 103 Contemporary Global Trends. (3)
Spring
Gives a grounding in patterns of international politics and global social change. Lecture, discussion.
General Studies: SB, G
M SGS 194 Special Topics. (1–4)
selected semesters
M SGS 294 Special Topics. (1–4)
selected semesters
M SGS 394 Special Topics. (1–4)
selected semesters
Topics may include the following:
• Professional Development
• Research Methods
M SGS 484 Internship. (1–12)
selected semesters
Topics may include the following:
• Study Abroad/Internship
M SGS 494 Special Topics. (1–4)
selected semesters
Topics may include the following:
• Capstone
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

Department of History
www.asu.edu/clas/history
480/965-5778
COOR 4595

Noel J. Stowe, Chair
CORE FACULTY
Regents’ Professor: Iverson
Snell Family Dean’s Distinguished Professor of History: Longley
Distinguished Foundation Professor of History: Fixico
Professors: Adelson, Batalden, Burg, Davis, Fuchs, Gratton, Green, Lavrin, MacKinnon, Rosales, Samuelson, Simpson, Stowe, Tillman, Warnicke
Associate Professors: Barnes, El Hamel, Gray, Guffett, Harzig, Hirt, Powers, Rush, Smith, Stoner, Thompson, Thornton, VanderMeer, Warren-Findley, Wright
Assistant Professors: Holian, Kaplan, Koopmans, Manchester, Miller, Petti, Plotkin, Whitaker, Wilson, Wood
Senior Instructional Professional: Luey

AFFILIATED FACULTY
Art
Associate Professor: Brown
Chicana and Chicano Studies
Associate Professor: Escobar
Global Studies
Associate Professor: Taylor

Women and Gender Studies
Professor: Rothschild
Associate Professor: Leong

HISTORY—BA

The BA degree in History consists of 30 semester hours in history and 15 hours in closely related fields, as approved by an undergraduate advisor in consultation with the student. At least 18 hours in history courses and nine hours in related fields must be in upper-division course work, with at least 12 of the upper-division HST hours taken in residence at the Tempe campus. HST 300 Historical Inquiry and HST 498 PS: History Pro-Seminar are required for all degree candidates. (Honors students may substitute HST 493 Honors Thesis for HST 498.)

Students majoring in history are required to complete HST 300 in the beginning of their junior year and before enrolling in 400-level history courses. HST 300 and HST 498 must be taken on the Tempe campus.

Students are required to complete course work in two different areas of concentration. One concentration must be defined geographically: Asia, Europe, Latin America, or the United States. The second concentration may be thematic or geographic. Students completing a thematic concentration must complete two courses outside the field of their geographic concentration. At least two history courses in either concentration must include topics outside the United States and Europe. Students must complete at least one course in the HST 302–307 “Studies in History” sequence.

The major includes the following:
1. one concentration of 18 hours (12 hours HST and six hours related field);
2. one concentration of 15 hours (12 hours HST and three hours related field);
3. HST 300, three hours (may be within a concentration);
4. HST 498, three hours (may be within a concentration);
5. elective related field courses, six hours;
6. two HST courses with content outside Europe and the United States (may be within a concentration);
7. two HST courses in thematic concentration outside the geographic concentration; and
8. at least one course in the HST 302–307 “Studies in History” sequence as part of one concentration.

A minimum grade of “C” (2.00) is required for all course work in the major and related fields. A minimum GPA of 2.25 in the 30 hours of history course work is required.

Asian Studies Certificate. Students majoring in History may elect to pursue an Asian Studies Certificate, combining courses from the major with selected outside courses of wholly Asian content. See “Asian Studies,” page 509, for more information.
Jewish Studies Certificate. Students majoring in History may elect to pursue the Jewish Studies Certificate, combining courses from the major with selected outside courses of wholly Jewish content. See “Jewish Studies,” page 512, for more information.

Latin American Studies Certificate. Students majoring in History may elect to pursue a Latin American Studies Certificate, combining courses from the major with selected outside courses of wholly Latin American content. See “Latin American Studies,” page 513, for more information.

Medieval and Renaissance Studies Certificate. Students majoring in History may elect to pursue the Medieval and Renaissance Studies Certificate by successfully completing the requirements. See “Medieval and Renaissance Studies,” page 513, for more information.

Russian and East European Studies Certificate. Students majoring in History may elect to pursue the Russian and East European Studies Certificate, combining courses from the major with selected outside courses of wholly Russian and East European content. See “Russian and East European Studies,” page 513, for more information.

Southeast Asian Studies Certificate. Students majoring in History may elect to pursue the Southeast Asian Studies Certificate, combining courses from the major with selected outside courses of wholly Southeast Asian content. See “Southeast Asian Studies,” page 514, for more information.

Women and Gender Studies Certificate. Students majoring in History may elect to pursue the Women and Gender Studies Certificate by successfully completing the requirements. See “Women and Gender Studies,” page 514, for more information.

MINOR IN HISTORY

The History minor consists of 18 semester hours of course work, at least 12 hours of which are in upper-division course work. Students earning a minor in history must complete one 12-hour HST concentration (geographic or thematic), HST 300, and 498. The Department of History requires a grade of at least “C” (2.00) in all courses in the minor. A minimum of six upper-division hours in the minor must be taken in residence at the Tempe campus.

BIS CONCENTRATION

A concentration in history is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

SECONDARY EDUCATION—BAE

This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education with an academic specialization in history have an advisor in the College of Education and an advisor within the Department of History. See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

Academic Specialization ITC Admission Requirements.

At least four required courses in the academic specialization must be completed with a grade of “C” (2.00) or higher before applying to the ITC professional program. A minimum GPA of 2.75 in history courses is required for admission to the ITC program and for graduation.

History. The major teaching field consists of 45 semester hours, of which at least 30 must be in history courses. At least 18 must be in upper-division courses. Six hours of teaching methods courses are also required. A minimum grade of “C” (2.00) is required in all academic specialization courses. Required major courses are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HST 101</td>
<td>Global History Since 1500</td>
<td>3</td>
</tr>
<tr>
<td>HST 109</td>
<td>The United States to 1865</td>
<td>3</td>
</tr>
<tr>
<td>HST 110</td>
<td>The United States Since 1865</td>
<td>3</td>
</tr>
<tr>
<td>HST 300</td>
<td>Historical Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>HST 498 PS</td>
<td>History Pro-Seminar</td>
<td>3</td>
</tr>
<tr>
<td>U.S. history courses</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>HST electives*</td>
<td>(non-U.S. history courses)</td>
<td>6</td>
</tr>
<tr>
<td>Related areas*</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>45</td>
</tr>
</tbody>
</table>

* Choose courses in consultation with a department advisor.

Teaching Methods

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HST 480</td>
<td>Methods of Teaching History: Classroom Resources</td>
<td>3</td>
</tr>
<tr>
<td>HST 481</td>
<td>Methods of Teaching History: Community Resources</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Students must complete HST 300 before enrolling in HST 480, 481, and 498. A minimum GPA of 2.75 in history courses is required for admission to the ITC program and for graduation. HST 480 and 481 may not be counted as part of the 45-hour requirement for the academic specialization.

Social Studies. An academic specialization in social studies is also available. Students pursuing a major in Secondary Education have an advisor in the College of Education and an advisor within the department of their academic specialization area.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

GRADUATE PROGRAMS

The faculty in the Department of History offer programs leading to the MA and PhD degrees. A Scholarly Publishing Certificate is also available. See the Graduate Catalog for requirements.
**DEPARTMENT OF HISTORY**

**HISTORY (HST)**

- **M HST 101 Global History Since 1500. (3)**
  - fall and spring
  - Survey of Africa, the Americas, and Eurasia; changes in communication, communities, demography, economics, environment, politics, religion, technology, warfare, and women. Lecture, CD-ROM, electronic forum, discussion.
  - General Studies: HU, G, H

- **M HST 102 Western Civilization. (3)**
  - fall and spring
  - Origins and development of Western societies and institutions from the ancient world through the Middle Ages.
  - General Studies: SB, H

- **M HST 103 Western Civilization. (3)**
  - fall and spring
  - Origins and development of Western societies and institutions from Black Death through the Renaissance and Reformation to the Enlightenment.
  - General Studies: HU/SB, H

- **M HST 104 Western Civilization. (3)**
  - fall and spring
  - Origins and development of Western societies and institutions from the French Revolution to the present.
  - General Studies: HU/SB, G, H

- **M HST 105 Slavic Civilization. (3)**
  - fall, spring, summer
  - Development of Slavic cultures and societies from medieval Byzantium to the present; introduction to modern Eurasia. Lecture, discussion, electronic forum.
  - General Studies: HU/SB, H

- **M HST 106 Asian Civilizations. (3)**
  - once a year
  - Civilizations of China, Japan, and India from antiquity to the 17th century.
  - General Studies: HU/SB, G, H

- **M HST 107 Asian Civilizations. (3)**
  - once a year
  - Civilizations of China, Japan, India, and Southeast Asia from the 17th century to the present.
  - General Studies: SB, G, H

- **M HST 108 Introduction to Japan. (3)**
  - fall
  - Historical survey of the people, culture, politics, and economy of Japan, supplemented by audiovisual presentations. Intended for nonmajors.
  - General Studies: SB, G, H

- **M HST 109 The United States to 1865. (3)**
  - fall and spring
  - Growth of the Republic from the colonial period through the Civil War. Growth of the Republic from the colonial period through the Civil War. Lecture, discussion, seminar. Prerequisites: ENG 102; ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240. Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240.
  - General Studies: HU/SB, H

- **M HST 110 The United States Since 1865. (3)**
  - fall and spring
  - Growth of the Republic from the Civil War to the present.
  - General Studies: SB, H

- **M HST 200 Historical Themes. (3)**
  - once a year
  - General introduction to selected themes in history. May be repeated for credit when topics vary.
  - General Studies: SB, H

- **M HST 201 Historical Themes in Asia. (3)**
  - once a year
  - General introduction to selected themes in Asian history. May be repeated for credit when topics vary.
  - General Studies: SB, H

- **M HST 202 Historical Themes in Europe. (3)**
  - once a year
  - General introduction to selected themes in European history. May be repeated for credit when topics vary.
  - General Studies: HU/SB, H

- **M HST 203 Historical Themes in Latin America. (3)**
  - once a year
  - General introduction to selected themes in Latin American history. May be repeated for credit when topics vary.
  - General Studies: SB, H

- **M HST 204 Historical Themes in the United States. (3)**
  - once a year
  - General introduction to selected themes in United States history. May be repeated for credit when topics vary.
  - General Studies: SB, H

- **M HST 205 Historical Themes in Africa. (3)**
  - fall and spring
  - General introduction to selected themes in African history. May be repeated for credit when topics vary.
  - General Studies: SB, H

- **M HST 210 American Social History. (3)**
  - once a year
  - American society from the colonial period to the present. Ethnicity, race, age, and sex as factors in historical experience. Prerequisite: ENG 101 or 105.
  - General Studies: L/SB, H

- **M HST 211 American Jewish History. (3)**
  - selected semesters
  - Chronological analysis of Jews and Judaism in American history and letters.
  - General Studies: SB, H

- **M HST 294 ST: Selected Topics in History. (3)**
  - selected semesters
  - Full description of topics for any semester is available in the Department of History office. May be repeated for credit.

- **M HST 300 Historical Inquiry. (3)**
  - fall and spring
  - Historical methods and critical inquiry related to particular events and processes. Topics vary. Required course for majors. Prerequisite for HST 498. Lecture, discussion, seminar. Prerequisites: ENG 102; History major; junior standing.
  - General Studies: L/HU/SB, H

- **M HST 302 Studies in History. (3)**
  - once a year
  - Specialized topics in history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship. May be repeated for credit when topics vary.
  - General Studies: HU/SB, H

- **M HST 303 Studies in Asian History. (3)**
  - once a year
  - Specialized topics in Asian history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship. May be repeated for credit when topics vary.
  - General Studies: SB, H

- **M HST 304 Studies in European History. (3)**
  - once a year
  - Specialized topics in European history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship. May be repeated for credit when topics vary.
  - General Studies: SB, H

- **M HST 305 Studies in Latin American History. (3)**
  - once a year
  - Specialized topics in Latin American history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship. May be repeated for credit when topics vary.
  - General Studies: HU/SB, H

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
<th>General Studies:</th>
</tr>
</thead>
<tbody>
<tr>
<td>M HST 306</td>
<td>Studies in United States History</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Specialized topics in United States history. Explores regions, cultures, and issues in history, and their interpretation in historical scholarship.</td>
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<tr>
<td></td>
<td>May be repeated for credit when topics vary.</td>
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<tr>
<td>M HST 307</td>
<td>Studies in African History</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Specialized topics in African history. Explores countries, cultures, and issues in history, and their interpretation in historical scholarship.</td>
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<tr>
<td></td>
<td>May be repeated for credit when topics vary.</td>
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<tr>
<td>M HST 309</td>
<td>Exploration and Empire</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Survey of European discovery, exploration, and imperialism in the early modern and modern periods.</td>
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<tr>
<td>M HST 310</td>
<td>Film as History</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Survey of moving image media as recorder, object, and writer of history.</td>
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<tr>
<td>M HST 313</td>
<td>American Cultural History to 1865</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Culture, including ideas, ideals, the arts, and social and economic standards, from the nation's colonial and early national periods.</td>
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<tr>
<td>M HST 314</td>
<td>American Cultural History Since 1865</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Culture, including ideas, ideals, the arts, and social and economic standards, from the age of industrialism to modern U.S.</td>
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<tr>
<td>M HST 315</td>
<td>Political History of the United States</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>American political history since independence, focusing post-1865. Evaluates major trends in issues, presidential leadership, elections, and state politics.</td>
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<tr>
<td></td>
<td>Lecture, discussion.</td>
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<tr>
<td>M HST 316</td>
<td>20th-Century U.S. Foreign Relations</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>U.S. relations with foreign powers from the late 19th century to the present.</td>
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<tr>
<td>M HST 319</td>
<td>U.S. Urban History to 1850</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>History of the city in American life from the colonial period to the mid-19th century.</td>
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<tr>
<td>M HST 320</td>
<td>U.S. Urban History Since 1850</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>History of the city in American life from the mid-19th century to the present.</td>
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<tr>
<td>M HST 321</td>
<td>Constitutional History of the United States to 1865.</td>
<td>(3)</td>
<td>fall</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Origin and development of the American constitutional system from colonial period through the Civil War.</td>
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<tr>
<td>M HST 322</td>
<td>Constitutional History of the United States Since 1865.</td>
<td>(3)</td>
<td>spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Development of the U.S. constitutional system from Reconstruction to the present.</td>
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<tr>
<td>M HST 325</td>
<td>Immigration and Ethnicity in the United States.</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Origins, historical development, and future of a multiethnic society, 1492 to 2050. Prerequisite: HST 109 or 110.</td>
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</tr>
<tr>
<td>M HST 327</td>
<td>Women in U.S. History, 1600–1880.</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Examines American women of diverse racial, religious, and ethnic groups and classes; focuses on changing definitions of women's roles.</td>
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<tr>
<td>M HST 328</td>
<td>Women in U.S. History, 1880–1980.</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Examines American women of diverse racial, religious, and ethnic groups and classes; focuses on changing definitions of women's roles.</td>
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<tr>
<td>M HST 329</td>
<td>Women in 20th-Century U.S. West.</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Examines how women of various cultures have contended for and shaped the U.S. West, including the West of imagination. Lecture, discussion.</td>
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<tr>
<td>M HST 330</td>
<td>Mexican Women in the United States: Conquests and Migrations. (3)</td>
<td></td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Overview of Chicana history from Mesoamerican origins to the present, focusing on Mexican women in the western U.S. Lecture, discussion.</td>
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<tr>
<td>M HST 331</td>
<td>Mexican American History to 1900.</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
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<tr>
<td></td>
<td>Mexican American history from pre-Hispanic origins to frontier journeys north through 19th-century life in the U.S. Southwest.</td>
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<tr>
<td>M HST 332</td>
<td>Mexican American History Since 1900.</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
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<tr>
<td></td>
<td>Traces the formation of Mexican American communities across the rural and urban U.S. and examines 20th-century immigration from Mexico.</td>
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<tr>
<td>M HST 333</td>
<td>African American History to 1865.</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
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<tr>
<td></td>
<td>The African American in American history, thought, and culture from slavery to 1865. Cross-listed as AFS 363. Credit is allowed for only AFS 363 or HST 333.</td>
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<tr>
<td>M HST 334</td>
<td>African American History Since 1865.</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
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<tr>
<td></td>
<td>The African American in American history, thought, and culture from 1865 to the present. Cross-listed as AFS 364. Credit is allowed for only AFS 364 or HST 334.</td>
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<tr>
<td>M HST 337</td>
<td>American Indian History to 1900.</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
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<tr>
<td></td>
<td>Cultural, economic, political, and social continuity and change of American Indian communities to 1900.</td>
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<tr>
<td>M HST 338</td>
<td>American Indian History Since 1900.</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Cultural, economic, political, and social continuity and change of American Indian communities from 1900 to the present.</td>
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<tr>
<td>M HST 341</td>
<td>The U.S. West in the 19th Century.</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Social, political, and economic development of the trans-Mississippi West, beginning with the Louisiana Purchase and ending in 1900.</td>
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<tr>
<td>M HST 342</td>
<td>The U.S. West in the 20th Century.</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Role of the western states in U.S. history since 1890 emphasizing politics, the environment, industry and labor, and ethnic minorities.</td>
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<tr>
<td>M HST 343</td>
<td>The American Southwest.</td>
<td>(3)</td>
<td>once a year</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Development of the region from 1848 to the present.</td>
<td></td>
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<tr>
<td>M HST 344</td>
<td>Arizona. (3)</td>
<td>(3)</td>
<td>fall and spring</td>
<td>SU, SB, C, H</td>
</tr>
<tr>
<td></td>
<td>Emergence of the state from early times to the present.</td>
<td></td>
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</tr>
</tbody>
</table>
M HST 347 Ancient Greece. (3)
fall
History and civilization of the Greek world from 650 BCE to the death of Alexander the Great.
General Studies: SB, H

M HST 348 Rome. (3)
spring
History and civilization of Rome from the beginning of the Republic to the end of the Empire.
General Studies: SB, H

M HST 349 The Early Middle Ages. (3)
fall
Political, socioeconomic, and cultural developments of Western Europe from the 5th through 10th centuries.
General Studies: HUSB, H

M HST 350 The Later Middle Ages. (3)
spring
Political, socioeconomic, and cultural developments of Western Europe from the 11th through 15th centuries.
General Studies: HUSB, H

M HST 351 Renaissance Europe. (3)
fall
Culture of the Renaissance in Italy and Northern Europe from the 14th to the early 16th centuries.
General Studies: L/HUSB, H

M HST 352 Europe's Reformations. (3)
spring
Causes and implications of the major Protestant, Catholic, and Radical religious reformations in 16th- and 17th-century Europe.
General Studies: L/HUSB, H

M HST 353 The Old Regime in Europe. (3)
fall
Society and culture of Europe during the 17th and 18th centuries.
General Studies: SB, H

M HST 354 Revolutionary Europe. (3)
spring
Political, social, economic, and intellectual currents in Europe from the French through the Russian Revolutions.
General Studies: SB, H

M HST 355 Total War and the Crisis of Modernity. (3)
fall
Forces of change and instability in early 20th-century Europe.
General Studies: SB, G, H

M HST 356 Europe Since 1945. (3)
selected semesters
Europe in its world setting since World War II, emphasizing major political and social issues from 1945 to the present.
General Studies: SB, G, H

M HST 357 Jewish History from the Bible to 1492. (3)
fall
Continuity and change in political, legal, economic, and sociocultural history of the Jews from biblical through medieval times. Lecture, discussion.
General Studies: SB, H

M HST 365 Jewish History from 1492 to 1948. (3)
spring
Jewish history from early modern through modern times, highlighting emancipation, enlightenment, and Jewish responses to modernity. Lecture, discussion.
General Studies: SB, G, H

M HST 356 Witchcraft and Heresy in Europe. (3)
selected semesters
Background, origins, and development of the Inquisition; persecution of women and marginal groups. Cross-listed as REL 374. Credit is allowed for only HST 361 or REL 374. Prerequisite: upper-division standing or instructor approval.
General Studies: L/HUSB, H

M HST 362 Sex and Society in Classical and Medieval Europe. (3)
fall
Family life, sex roles, and marriage, and their relationship to political, economic, and religious change in classical and medieval Europe.

Lecture, discussion. Prerequisite: upper-division standing or instructor approval.
General Studies: SB, H

M HST 363 Sex and Society in Early Modern Europe. (3)
spring
Family life, sex roles, and marriage and their relationship to political, economic, and religious change in early modern Europe. Lecture, discussion. Prerequisite: upper-division standing or instructor approval.
General Studies: HUSB, H

M HST 364 Sex and Society in Modern Europe. (3)
selected semesters
Family life, sex roles, and marriage, and their relationship to political, economic, and social changes in modern Europe. Lecture, discussion. Prerequisite: upper-division standing or instructor approval.
General Studies: L/SB, H

M HST 365 Women in Europe. (3)
one a year
European women's diverse religious, ethnic, national, and economic roles in society, culture, and politics, 1750 to the present.
General Studies: L/HUSB, H

M HST 366 England to 1689. (3)
one a year
Political, economic, and social development of the English people to the late 17th century.
General Studies: SB, H

M HST 367 Modern Britain. (3)
one a year
Political, economic, and social development in Britain from 17th century to the present.
General Studies: SB, H

M HST 368 Culture and Imagination in European History. (3)
one a year
Topics in European cultural and intellectual history. May be repeated for credit.
General Studies: HU, H

M HST 370 Eastern Europe in Transition. (3)
one a year
Democratization, privatization, and identity transformations since the fall of communism in contemporary Eastern Europe and the former Soviet Union. Lecture, discussion.
General Studies: SB, G, H

M HST 372 The Modern Middle East. (3)
selected semesters
Impact of the West and modernization upon Middle Eastern governments, religion, and society in the 19th and 20th centuries.
General Studies: SB, G, H

M HST 375 Colonial Latin America. (3)
fall and spring
Ancient civilization, exploration and conquerors, and colonial institutions.
General Studies: SB, H

M HST 376 Modern Latin America. (3)
fall and spring
Nationalistic development of the independent republics since 1821.
General Studies: SB, H

M HST 377 Women in Colonial Latin America. (3)
fall
History of women in colonial Latin America, cross-examining class, race, and gender relations in depth. Lecture, discussion.
General Studies: H

M HST 378 Latin American Women: The National Period. (3)
spring
Surveys the history of women, gender relations, and state policies in a broad continental setting, from independence to the present. Lecture, media, discussion.
General Studies: SB, G, H
M HST 379 Rebellion and Revolution in South America. (3)  
fall and spring  
Political, economic, and social development of Spanish-speaking nations in South America.  
General Studies: SB, H

M HST 380 Cultural History of Latin America. (3)  
selected semesters  
Main currents of thought, the outstanding thinkers, and their impact on 19th- and 20th-century Latin America. Cultural and institutional basis of Latin American life.  
General Studies: SB, H

M HST 383 China. (3)  
fall  
Political, economic, social, and cultural history of the Chinese people from early times to the 17th century.  
General Studies: SB, H

M HST 384 China. (3)  
spring  
Political, economic, social, and cultural history of the Chinese people from the 17th century to the present.  
General Studies: SB, G, H

M HST 385 Chinese Science and Medicine. (3)  
selected semesters  
Explores developments of Chinese traditions dealing with the natural world, science, and medicine. Lecture, discussion. Cross-listed as HPS 325. Credit is allowed for only HPS 325 or HST 385.  
General Studies: HU, G, H

M HST 386 Interpreting China’s Classics. (3)  
selected semesters  
Study of selected Confucian and/or Taoist classics and ways they have been read in both Asian and Western scholarship. Cross-listed as HUM 312. Credit is allowed for only HST 386 or HUM 312.  
General Studies: L/HU, H

M HST 387 Japan. (3)  
once a year  
Political, economic, social, and cultural history of the Japanese people from early times to the 17th century.  
General Studies: L/SB, H

M HST 388 Japan. (3)  
once a year  
Political, economic, social, and cultural history of the Japanese people from the 17th century to the present.  
General Studies: SB, G, H

M HST 389 Japanese Society and Values: Premodern. (3)  
selected semesters  
Effects of economic and social transitions on personal and social values as reflected in the dramatizations of contemporary events.  
General Studies: SB, G, H

M HST 391 Modern Southeast Asia. (3)  
spring  
Vietnam, Laos, Cambodia, Thailand, Burma, Malaysia, Singapore, Brunei, Indonesia, and Philippines since 1750: imperialism, revolution, and independence. Lecture, discussion.  
General Studies: SB, G, H

M HST 394 ST: Selected Topics in History. (3)  
fall and spring  
Full description of topics for any semester is available in the Department of History Office. May be repeated for credit.  
General Studies: SB, H

M HST 405 Colonial American History to 1763. (3)  
once a year  
Political, economic, social, and cultural history of the colonial era. Concentrates on English colonies, with some consideration of Spanish, French, and other colonial regions in North America.  
General Studies: SB, H

M HST 406 The American Revolution, 1763–1789. (3)  
once a year  
Causes, course, and consequences of the American Revolution culminating in the ratification of the Constitution.  
General Studies: SB, H

M HST 407 The Early U.S. Republic, 1789–1850. (3)  
once a year  
Political, social, economic, and cultural development of the United States from the Revolution to 1850.  
General Studies: L/SB, H

M HST 408 Civil War and Reconstruction. (3)  
once a year  
Explores the causes, conduct, and consequences of the American Civil War, concentrating on the years 1848 to 1877.  
General Studies: L/SB, H

M HST 409 The Emergence of the Modern United States, 1877 to 1918. (3)  
once a year  
Triumph of modern political, social, and economic structures and values, 1877–1918; role of region, religion, race, and ethnicity.  
General Studies: SB, H

M HST 410 The Modern United States, 1918 to 1945. (3)  
once a year  
1920s boom and the crash, the Depression and the New Deal response. The Second World War at home and abroad.  
General Studies: SB, H

M HST 411 The Postwar United States, 1945 to 1973. (3)  
once a year  
Cold War, prosperity, reform, and immense social and political change in the U.S.  
General Studies: SB, H

M HST 412 The Contemporary United States, 1973 to the Present. (3)  
once a year  
End of the Cold War, political crises, and cultural transformations in the U.S.  
General Studies: SB, H

M HST 413 The Modern United States, 1918 to 1945. (3)  
once a year  
Cold War, prosperity, reform, and immense social and political change in the U.S.  
General Studies: SB, H

M HST 414 The Modern U.S. Economy. (3)  
selected semesters  
Origins of 19th-century slavery and industrialization; 20th-century crisis and regulation: political economy of an advanced capitalist democracy. Prerequisite: ECN 211 (or 212) or HST 109 (or 110).  
General Studies: SB, H

M HST 415 Unequal Sisters: Women and Political and Cultural Change. (3)  
once a year  
Examines race, ethnic, and class differences among women, focusing on the political and cultural experiences of women in the U.S.  
General Studies: L/SB, C, H

M HST 417 Topics in Mexican American History. (3)  
once a year  
Focuses on specific topics in Mexican American history, including immigration, civil rights, the Chicano Movement, union activism, and regional and generational differences.  
General Studies: SB, C, H

M HST 423 The Tudor Monarchy. (3)  
once a year  
Political, cultural, and social foundations of 16th-century England.  
General Studies: SB, H

M HST 424 The Stuart Transformation of England. (3)  
once a year  
Political, social, economic, and cultural developments in 17th-century England.  
General Studies: SB, H

M HST 426 The British Empire. (3)  
once a year  
British imperialism and colonialism in Africa, the Americas, Asia, and the South Pacific. Prerequisite: upper-division standing or instructor approval.  
General Studies: SB, H

M HST 427 The French Revolution and the Napoleonic Era. (3)  
once a year  
Conditions in Pre-Revolutionary and Revolutionary France; organization of France under Napoleon and impact of French changes upon Europe.  
General Studies: SB, H

M HST 428 Modern France. (3)  
selected semesters  
Social, political, economic, and cultural transformations of French society, 1815–present. Impact of industrialization, war, and revolution on people’s lives. Prerequisite: upper-division standing or instructor approval.  
General Studies: SB, G, H
M HST 429 Modern Germany. (3)
  once a year
  Germany since 1871.
  General Studies: SB, G, H

M HST 430 Hitler: Man and Legend. (3)
  once a year
  Biographical approach to the German Third Reich emphasizing nature
  of Nazi regime, sociocultural issues, World War II, and historiography.
  General Studies: SB, H

M HST 431 Eastern Europe and the Balkans Before 1914. (3)
  selected semesters
  Empire and nation in Eastern Europe and the Balkans before World
  War I, emphasizing Hapsburg and Ottoman lands.
  General Studies: SB, H

M HST 432 Eastern Europe and the Balkans in the 20th Century. (3)
  selected semesters
  Politics and culture in Eastern Europe and the Balkans from World
  War I to the present.
  General Studies: SB, G, H

M HST 435 The Russian Empire. (3)
  fall
  Development of Russian imperial institutions and civil society from the
  17th to the early 20th centuries. Lecture, discussion.
  General Studies: SB, H

M HST 436 The Soviet Experiment. (3)
  spring
  Communist revolutionaries' rule of Russia, focusing on utopian
  culture, Stalinist terror, heroism in war, and the breakup of the former
  USSR.
  General Studies: SB, G, H

M HST 437 Spain Through the Golden Age. (3)
  selected semesters
  Cultural, economic, political, and social development of Spain from
  antiquity to the late 17th century.
  General Studies: HUSB, H

M HST 438 Modern Spain. (3)
  selected semesters
  Cultural, economic, political, and social development of modern Spain.
  General Studies: HUSB, G, H

M HST 442 The Russian People's Republic of China. (3)
  once a year
  Analyzes major political, social, economic, and intellectual trends in
  China since the founding of the People's Republic in 1949.
  General Studies: SB, G, H

M HST 455 The United States and Japan. (3)
  fall
  Cultural, political, and economic relations in the 19th and 20th
  centuries. Emphasizes post-World War II period.
  General Studies: SB, G, H

M HST 456 The Vietnam War. (3)
  once a year
  Intersection of American and Asian histories in Vietnam, viewed from
  as many sides as possible.
  General Studies: SB, G, H

M HST 480 Methods of Teaching History: Classroom Resources. (3)
  fall
  Methods in instruction, organization, and presentation of the subject
  matter of history and closely allied fields. Prerequisites: HST 300; ITC
  admission. Pre- or corequisites: SED 403, 598.

M HST 481 Methods of Teaching History: Community Resources. (3)
  spring
  Identify community-based resources for teaching history, work with
  resources, and learn how to integrate them into the secondary
  classroom. Lecture, lab. Prerequisite: HST 480.

M HST 484 Internship. (1–6)
  selected semesters

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

M HST 493 Honors Thesis. (3)
  selected semesters
  General Studies: L

M HST 494 Special Topics. (1–4)
  selected semesters

M HST 496 History Pro-Seminar. (3)
  fall and spring
  Required course for majors on topic selected by instructor; writing-
  intensive course related to the development of research skills and
  writing tools used by historians. May not be repeated without
  department approval. Prerequisites: HST 300; History major; senior
  standing.
  General Studies: L

M HST 499 Individualized Instruction. (1–3)
  selected semesters

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

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

SCHOLARLY PUBLISHING (PUB)

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

L literacy and critical inquiry / MA mathematics / CS computer/statistics/
  quantitative applications / HU humanities and fine arts / SB social and
  behavioral sciences / SG natural science—general core courses / SG natural
  science—quantitative / C cultural diversity in the United States / G global / 
  H historical / See “General Studies,” page 93.
Hugh Downs School of Human Communication

asu.edu/clas/communication
480/965-5095
STAUF A412

H. L. “Bud” Goodall Jr., Director

Professors: Alberts, Broome, Canary, Carlson, Corman, Goodall, Guerrero, Jain, Lederman, Martin, McPhee, Mongeau, Nakayama

Associate Professors: Corey, Davey, Davis, De la Garza, Floyd, Martinez, Trethewey

Assistant Professors: Brouwer, McDonald, Park-Fuller, Tracy

Instructional Professional: Olson

PURPOSE

The Hugh Downs School of Human Communication exists to advance the understanding of message-related human behavior for the purpose of improving communicative interactions. Teaching, research, and service are directed to the continued development of knowledge and application of principles of communication. Employers have ranked interpersonal, analytical, teamwork, computer, and verbal communication skills as the top five skills desired for new hires. The curriculum is designed so that majors are proficient in each of these areas upon graduation. Courses are not offered in broadcasting or journalism.

GENERAL INFORMATION

A minimum cumulative GPA of 2.50 is required for enrollment in all upper-division courses and COM 207. A minimum cumulative GPA of 2.25 is required for enrollment in COM 110, 241, 250, and 263. An exception to the GPA requirement exists only when newly admitted students enroll in COM 110, 241, 250, or 263.

DEGREE REQUIREMENTS

BA and BS Degrees

Students may choose to complete either a Bachelor of Arts or Bachelor of Science degree in Communication. The BA degree requires a minimum of 30 semester hours and 15 hours of related area courses. The BS degree requires a minimum of 30 semester hours, including a General Studies CS (statistics) course; COM 404 or 407; COM 408; and one pair of the following courses:

COM 110 Elements of Interpersonal Communication SB ............ 3
or COM 310 Relational Communication (3)
COM 410 Interpersonal Communication Theory and Research SB ......................................................... 3

Total ........................................................................................................... 6

COM 250 Introduction to Organizational Communication SB........3
COM 450 Theory and Research in Organizational Communication SB ......................................................... 3

Total ........................................................................................................... 6

COM 241 Introduction to Oral Interpretation L/HU .................... 3
or COM 232 Communication Approaches to Popular Culture C (3)

COM 421 Rhetoric of Social Issues HU ........................................ 3

Total ........................................................................................................... 6

COM 263 Elements of Intercultural Communication SB, C, G ......3
COM 463 Intercultural Communication Theory and Research SB, G ............................................................ 3

Total ........................................................................................................... 6

Both degree options require students to take three core courses (COM 207, 225, and 308) plus 21 semester hours, 18 of which must be upper-division course work.

To assure the breadth and depth of their education, all Communication undergraduates must complete the requirements of the university General Studies, the College of Liberal Arts and Sciences, and the Hugh Downs School of Human Communication. For descriptive information on university requirements, refer to “General Studies,” page 93, and “University Graduation Requirements,” page 89. See “College Graduation Requirements,” page 503.

Students should consult the school for current information concerning College of Liberal Arts and Sciences and Hugh Downs School of Human Communication requirements.

Communication Internships

Internships (COM 484) consist of supervised field experiences and are available to undergraduate students with a minimum ASU GPA of 2.50. Students must also complete COM 207, 225, and 308 with a grade of “C” (2.00) or higher and 56 semester hours of credit to be eligible for an internship. An application for internship must be completed in the semester before the intended term for an internship. Contact the school for specific deadline dates. Internships must receive prior approval from the internship programs coordinator before student registration for the course. Internships may be taken for up to six semester hours.

MINOR IN COMMUNICATION

The minor in Communication consists of 15 semester hours of courses, including COM 100 plus COM 225 or 259, and nine additional semester hours, at least six of which must be in the upper division. Nine of the total 15 semester hours must be Tempe campus resident credits, including six semester hours of upper-division credit. No pass/fail, “Y” credit, or credit/no-credit courses are allowed. Communication courses required for one’s major may not also count for the minor. All prerequisite and GPA
requirements must be met. The “C” (2.00) minimum requirement must be met for each class.

**BIS CONCENTRATION**

A concentration in communication is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**GRADUATE PROGRAMS**

In addition to offering an MA degree program, the Hugh Downs School of Human Communication also offers an interdisciplinary PhD degree program in Communication. See the Graduate Catalog for the requirements and areas of concentration.

**HUGH DOWNS SCHOOL OF HUMAN COMMUNICATION (COM)**

For more COM courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

**M COM 100 Introduction to Human Communication. (3)**
fall, spring, summer
Topics-oriented introduction to basic theories, dimensions, and concepts of human communicative interaction and behavior. General Studies: SB

**M COM 110 Elements of Interpersonal Communication. (3)**
fall, spring, summer
Demonstration and practice of communicative techniques in establishing and maintaining interpersonal relationships. Prerequisite: 2.25 GPA. General Studies: SB

**M COM 207 Introduction to Communication Inquiry. (3)**
fall, spring, summer
Bases of inquiry into human communication, including introduction to notions of theory, philosophy, problems, and approaches to the study of communication. Prerequisites: COM 100; minimum cumulative 2.50 GPA.

**M COM 222 Argumentation. (3)**
fall and spring
Philosophical and theoretical foundations of argumentation, including a comparison of models of advocacy and evidence. Prerequisite: ENG 101 or 105. General Studies: L

**M COM 225 Public Speaking. (3)**
fall, spring, summer
Verbal and nonverbal communication in platform speaking. Discussion and practice in vocal and physical delivery and in purposeful organization and development of public communication. Prerequisite: ENG 101 or 105. General Studies: L

**M COM 230 Small Group Communication. (3)**
fall, spring, summer
Principles and processes of small group communication, attitudes, and skills for effective participation and leadership in small groups, small group problem solving, and decision making. General Studies: SB

**M COM 241 Introduction to Oral Interpretation. (3)**
fall, spring, summer
Communication of literary materials through the mode of performance. Verbal and nonverbal behavior, interface of interpreter with literature and audience, and rhetorical and dramatic analysis of literary modes. Prerequisites: ENG 101 (or 105); 2.25 GPA. General Studies: L/HU

**M COM 250 Introduction to Organizational Communication. (3)**
fall, spring, summer
Introduces the study of communication in organizations, including identification of variables, roles, and patterns influencing communication in organizations. Prerequisite: 2.25 GPA. General Studies: SB

**M COM 259 Communication in Business and the Professions. (3)**
fall, spring, summer
Interpersonal, group, and public communication in business and professional organizations. Not open to freshmen and not available for credit toward the major.

**M COM 263 Elements of Intercultural Communication. (3)**
fall, spring, summer
Basic concepts, principles, and skills for improving communication between persons from different minority, racial, ethnic, and cultural backgrounds. Lecture, discussion. Prerequisite: 2.25 GPA. General Studies: SB, C, G

**M COM 271 Voice Improvement. (3)**
selected semesters
Intensive personal and group experience to improve normal vocal usage, including articulation and pronunciation.

**M COM 281 Communication Activities. (1–3)**
fall, spring, summer
Nongraded participation in forensics or interpretation cocurricular activities. Maximum 3 semester hours each semester. Prerequisite: instructor approval.

**M COM 294 Special Topics. (1–4)**
fall, spring, summer
Topics may include the following:
• Beyond Words. (3)

**M COM 300 CIS: Communication in Interdisciplinary Studies. (3)**
fall, spring, summer
Examines and analyzes communication in the context of other academic disciplines. May be repeated for credit. Open to BIS majors only. Prerequisites: both COM 100 and 225 or only COM 259; minimum cumulative GPA of 2.00.

**M COM 301 Introductory Theories and Principles of Communication: Communication in Relationships, Organizations, and Public Contexts. (3–9)**
once a year
Integrated introduction to the theories and principles of communication in public, interpersonal, and organizational contexts. Lecture, discussion, online component.

**M COM 308 Advanced Research Methods in Communication. (3)**
fall, spring, summer
Advanced communication research methods, including quantitative, qualitative, and critical approaches. Prerequisite: minimum cumulative 2.50 GPA. Prerequisites with a grade of “C” (2.00) or higher: COM 207; MAT 142 (or higher-level MAT course). General Studies: L

**M COM 310 Relational Communication. (3)**
fall and spring
Examines communication issues in the development of personal relationships. Current topics concerning communication in friendship, romantic, and work relationships. Prerequisites: COM 100; minimum cumulative 2.50 GPA.

**M COM 312 Communication, Conflict, and Negotiation. (3)**
fall and spring
Theories and strategies of communication relevant to the management of conflicts and the conduct of negotiations. Prerequisites: COM 100; minimum cumulative 2.50 GPA.

COLLEGE OF LIBERAL ARTS AND SCIENCES

M COM 316 Gender and Communication. (3)
fall, spring, summer
Introduces gender-related communication. Examines verbal, nonverbal, and paralinguistic differences and similarities within social, psychological, and historic perspectives. Prerequisite: minimum cumulative 2.50 GPA.
General Studies: SB, C

M COM 317 Nonverbal Communication. (3)
tail, spring, summer
Study of communication using space, time, movement, facial expression, touch, appearance, smell, environment, objects, voice, and gender/cultural variables. Not open to students with credit for COM 294 ST: Beyond Words. Prerequisite: minimum cumulative 2.50 GPA.

M COM 319 Persuasion and Social Influence. (3)
tail and spring
Variables that influence and modify attitudes and behaviors of message senders and receivers, including analysis of theories, research, and current problems. Prerequisites: COM 207 (or its equivalent); minimum cumulative 2.50 GPA. Prerequisite for nonmajors: POS 401 or PSY 230 or QBA 221 or SOC 390 or STP 226. General Studies: SB

M COM 320 Communication and Consumerism. (3)
tail and spring
Critical evaluation of messages designed for public consumption. Perceiving, evaluating, and responding to political, social, and commercial communication. Prerequisite: minimum cumulative 2.50 GPA.
General Studies: SB

M COM 321 Rhetorical Theory and Research. (3)
tail and spring
Historical development of rhetorical theory and research in communication, from classical antiquity to the present. Prerequisites: COM 100; minimum cumulative 2.50 GPA. General Studies: L/HU, H

M COM 322 Communication Approaches to Popular Culture. (3)
tail, spring, summer
Critical analysis of popular culture within social and political contexts; emphasizes multicultural influences and representations in everyday life. Lecture, discussion. Prerequisites: COM 100; minimum cumulative 2.50 GPA. General Studies: C

M COM 325 Advanced Public Speaking. (3)
tail and spring
Social and pragmatic aspects of public speaking as a communicative system; strategies of rhetorical theory and the presentation of forms of public communication. Prerequisites: COM 225; minimum cumulative 2.50 GPA. General Studies: L

M COM 326 Court Room Oratory. (3)
tail in even years
Increases knowledge and appreciation of the role of communication in the development of legal and public policies. General Studies: L

M COM 341 Social Contexts for Performance. (3)
selected semesters
Adaptation and performance of literature for the community outside the university. Research into the practical uses of performed literature. Prerequisite: minimum cumulative 2.50 GPA.

M COM 344 Performance of Oral Traditions. (3)
selected semesters
Cultural beliefs and values studied through ethnographic research and performance of personal narratives, folklore, myths, legends, and other oral traditions. Lecture, fieldwork, research paper. Prerequisite: minimum cumulative 2.50 GPA. General Studies: HU, C

M COM 371 Language, Culture, and Communication. (3)
tail and spring
Cultural influences of language on communication, including social functions of language; bilingualism, biculturalism, and biculturism. Lecture, discussion. Prerequisites: COM 263; minimum cumulative 2.50 GPA. General Studies: SB, C, G

M COM 382 Classroom Apprenticeship. (1–3)
tail, spring, summer
Nongraded credit for students extending their experience with a content area by assisting with classroom supervision in other COM courses (maximum 3 semester hours each semester). Prerequisites: 2.50 cumulative GPA; written instructor approval.

M COM 394 Special Topics. (1–4)
tail, spring, summer
Prerequisite: minimum cumulative 2.50 GPA.

M COM 400 CIP: Communication in Professions. (3)
tail, spring, summer
Specialized study of communication processes in professional and organizational settings. Open to BIS majors only. May be repeated for credit. Lecture, discussion. Prerequisites: both COM 100 and 225 or only COM 259; minimum cumulative GPA of 2.00. General Studies: HU, C

M COM 404 Research Apprenticeship. (3)
tail and spring
Direct research experience on faculty projects. Student/faculty match based on interests. Lecture, apprenticeship. Prerequisites: COM 308 (or instructor approval); minimum cumulative 2.50 GPA; application required.

M COM 407 Advanced Critical Methods in Communication. (3)
tail, spring, summer
Examines critical approaches relevant to communication, including textuality, social theory, cultural studies, and ethnography. Lecture, discussion. Prerequisites: COM 308; minimum cumulative 2.50 GPA.

M COM 408 Quantitative Research Methods in Communication. (3)
tail and spring
Survey and analysis of major research topics, paradigms, and theories dealing with message exchanges between and among social peers. Prerequisites: COM 110 (or 310), 308; minimum cumulative 2.50 GPA. General Studies: SB

M COM 410 Interpersonal Communication Theory and Research. (3)
tail, spring, summer
Survey and analysis of major research topics, paradigms, and theories dealing with message exchanges between and among social peers. Prerequisites: COM 110 (or 310), 308; minimum cumulative 2.50 GPA. General Studies: SB

M COM 411 Communication in the Family. (3)
tail in even years
Introduces gender-related communication. Examines verbal, nonverbal, and paralinguistic differences and similarities within social, psychological, and historic perspectives. Prerequisite: minimum cumulative 2.50 GPA.

M COM 414 Crisis Communication. (3)
selected semesters
Role of communication in crisis development and intervention. Prerequisite: minimum cumulative 2.50 GPA.

M COM 421 Rhetoric of Social Issues. (3)
tail and spring
Critical rhetorical study of significant speakers and speeches on social issues of the past and present. Prerequisites: COM 308, 321 (or 323). General Studies: HU

M COM 426 Political Communication. (3)
tail
Theories and criticism of political communication, including campaigns, mass persuasion, propaganda, and speeches. Emphasis on rhetorical approaches. Prerequisite: minimum cumulative 2.50 GPA. General Studies: SB

M COM 430 Leadership in Group Communication. (3)
selected semesters
Theory and process of leadership in group communication, emphasizing philosophical foundations, contemporary research, and applications to group situations. Prerequisites: COM 230; minimum cumulative 2.50 GPA.
M COM 441 Performance Studies. (3) fall, spring, summer
Theory, practice, and criticism of texts in performance. Emphasis on the interaction between performer, text, audience, and context.
Prerequisites: COM 241, 308; minimum cumulative 2.50 GPA.
General Studies: HU

M COM 442 Identity, Performance, and Human Communication. (3) selected semesters
Explores communication dimensions of self and others as performance. Examines topics that include gender, race, sexuality, age, and ethnicity through performance. Lecture, workshops.
Prerequisites: COM 225 (or 241); minimum cumulative 2.50 GPA.

M COM 445 Narrative Performance. (3) selected semesters
Theory and practice of performing narrative texts (e.g., prose fiction, oral histories, diaries, essays, letters). Includes scripting, directing, and the rhetorical analysis of storytelling.
Prerequisites: COM 241; minimum cumulative 2.50 GPA.
General Studies: HU, C

M COM 446 Performance of Literature Written by Women. (3) selected semesters
Explores, through performance and critical writing, literature written by women.
Prerequisite: minimum cumulative 2.50 GPA.
General Studies: HU, C

M COM 450 Theory and Research in Organizational Communication. (3) fall, spring, summer
Critical review and analysis of the dominant theories of organizational communication and their corollary research strategies.
Prerequisites: COM 250, 308; minimum cumulative 2.50 GPA.
General Studies: SB

M COM 453 Communication Training and Development. (3) once a year
Examines the procedures and types of communication training and development in business, industry, and government.
Prerequisites: COM 250; minimum cumulative 2.50 GPA.

M COM 463 Intercultural Communication Theory and Research. (3) fall, spring, summer
Surveys and analyzes major theories and research dealing with communication between people of different cultural backgrounds, primarily in international settings.
Lecture, discussion, small group work.
Prerequisites: COM 263, 308; minimum cumulative 2.50 GPA.
General Studies: SB, G

M COM 465 Intercultural Communication Workshop. (3) selected semesters
Experientially based study of communication between members of different cultures designed to help improve intercultural communication skills.
Prerequisites: minimum cumulative 2.50 GPA; instructor approval.

M COM 484 Communication Internship. (1–6) fall, spring, summer
Prerequisites: COM 225, 308; minimum cumulative 2.50 GPA; application required. Pre- or corequisite: COM 410 or 421 or 441 or 450 or 483.

M COM 494 Special Topics. (1–3) fall, spring, summer
Topics may include the following:
• Special Events Management
Prerequisite: minimum cumulative 2.50 GPA.

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

Graduate-Level Courses. For information about courses numbered from 500 to 799, see the Graduate Catalog, or access www.asu.edu/catalog on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.
Elective
Anthropology .................................................................2–3

Related Fields
Statistics .............................................................................3

Total .................................................................42–43

Consultation with the undergraduate advisor and a faculty mentor in the School of Human Evolution and Social Change is recommended each semester. The anthropology undergraduate advising office is located in ANTH 166.

Course work in anthropology completed at other institutions is evaluated by the undergraduate advisor. The College of Liberal Arts and Sciences requires that transfer students complete at least 12 semester hours of upper-division course work at ASU in the department/school of their major in order to be eligible for graduation.

In addition to a cumulative GPA of 2.00 or higher, all anthropology students must obtain a minimum grade of “C” (2.00) in all upper- and lower-division anthropology courses and all related fields.

Each student’s Declaration of Graduation and Degree Audit Report, or Program of Study, must be reviewed and approved by the anthropology undergraduate advisor.

Introductory, Distribution, and Related Fields Requirements

Consult with a School of Human Evolution and Social Change undergraduate advisor for semester course description booklets and semester schedules, which indicate the regular and omnibus courses being offered. No courses may be used to fulfill more than one Anthropology major or minor requirement.

Required Introductory Courses

ASB 102 Introduction to Cultural and Social Anthropology SB, G .........................................................3

ASB 222 Buried Cities and Lost Tribes: Our Human Heritage HU/SB, G, H ...........................................3

or ASB 223 Buried Civilizations of the Americas HU/SB, G, H (3)

ASM 104 Bones, Stones, and Human Evolution SB/SG .................................................................4

Distribution Requirements

Upper-Division Linguistics

One course chosen from the following list* .................................................................3

ASB 480 Introduction to Linguistics SB (3)

ASB 481 Language and Culture SB (3)

ASB 483 Sociolinguistics and the Ethnography of Communication SB (3)

Sociocultural

Two courses chosen from the following list* .................................................................6

ASB 202 Ethnic Relations in the United States SB, C, H (3)

ASB 211 Women in Other Cultures HU/SB, G (3)

ASB 311 Principles of Social Anthropology SB (3)

ASB 314 Comparative Religion (3)

ASB 319 The North American Indian (3)

ASB 321 Indians of the Southwest LSB, C, H (3)

ASB 322 Peoples of Mesoamerica SB, G (3)

ASB 323 Indians of Latin America SB, G (3)

ASB 324 Peoples of the Pacific G (3)

ASB 325 Peoples of Southeast Asia G (3)

ASB 350 Anthropology and Art (3)

ASB 351 Psychological Anthropology SB (3)

ASB 353 Death and Dying in Cross-Cultural Perspective HU/SB, G (4)

ASB 412 History of Anthropology LS/SB (3)

ASB 416 Economic Anthropology LS/SB (3)

ASB 417 Political Anthropology (3)

ASB 485 U.S.-Mexico Border in Comparative Perspective (3)

Archaeology

Two courses chosen from the following list* .................................................................6

ASB 231 Archaeological Field Methods SG (4)

ASB 326 Human Impacts on Ancient Environments SB, H (3)

ASB 330 Principles of Archaeology SB (3)

ASB 335 Prehistory of the Southwest SB, C, H (3)

ASB 337 Pre-Hispanic Civilization of Middle America HU/SB, G, H (3)

ASB 338 Archaeology of North America SB, H (3)

ASB 361 Pleistocene Archaeology H (3)

ASB 362 The Neolithic Revolution and Its Consequences H (3)

ASM 338 Anthropological Field Session (2–8)

ASM 365 Laboratory Methods in Archaeology (4)

ASM 435 Archaeological Pollen Analysis (3)

ASM 472 Archaeological Ceramics (3)

Physical Anthropology

Two courses chosen from the following list* .................................................................6

ASM 246 Human Origins (3)

ASM 301 Peoples of the World SB (3)

ASM 341 Human Osteology (4)

ASM 342 Human Biological Variation SG (4)

ASM 343 Primatology (3)

ASM 344 Fossil Hominids H (4)

ASM 345 Disease and Human Evolution (3)

ASM 348 Social Issues in Human Genetics SB (3)

ASM 452 Dental Anthropology SG (4)

ASM 454 Comparative Primate Anatomy (4)

ASM 455 Primate Behavior Laboratory L (3)

Geographic Area Courses

Archaeology or Physical Anthropology

One course chosen from the following list* .................................................................3

ASB 335 Prehistory of the Southwest SB, C, H (3)

ASB 337 Pre-Hispanic Civilization of Middle America HU/SB, G, H (3)

ASB 338 Archaeology of North America SB, H (3)

ASB 361 Pleistocene Archaeology H (3)

ASB 362 The Neolithic Revolution and Its Consequences H (3)

ASM 301 Peoples of the World SB (3)

Ethnographic

One course chosen from the following list* .................................................................3

ASB 319 The North American Indian (3)

ASB 321 Indians of the Southwest LSB, C, H (3)

ASB 322 Peoples of Mesoamerica SB, G (3)

ASB 323 Indians of Latin America SB, G (3)

ASB 324 Peoples of the Pacific G (3)

ASB 325 Peoples of Southeast Asia G (3)

ASB 485 U.S.-Mexico Border in Comparative Perspective (3)

Anthropology Elective

Any anthropology course .................................................................2–3

Related Fields

One lower- or upper-division statistics course ...............................................................3

Total .................................................................42–43

* Consult with a School of Human Evolution and Social Change undergraduate advisor for courses not listed that may fulfill distribution requirements.
MINOR IN ANTHROPOLOGY

The Anthropology minor requires a minimum of 18 semester hours. Two of the introductory courses—from ASB 102, ASM 104, and ASB 222 or 223—are required. However, the particular introductory courses selected may limit the anthropology courses available in the upper division. Twelve semester hours must be upper division and represent at least two of the three subfields of anthropology. The three subfields are:

1. sociocultural anthropology (with linguistics);
2. archaeology; and
3. physical anthropology.

The courses chosen to represent two of the three subfields must be drawn from the “Distribution Requirements,” page 567, of those two subfields. A minimum grade of “C” (2.00) is required for all courses taken for the minor in Anthropology.

The minor in Anthropology provides students with a great deal of flexibility in selecting courses. The program has been designed to allow students to focus on areas within the discipline which articulate well with their major. All students interested in the Anthropology minor are encouraged to discuss the options available with a School of Human Evolution and Social Change undergraduate advisor.

BIS CONCENTRATION

For students pursuing the Bachelor of Interdisciplinary Studies (BIS) degree, a concentration in anthropology requires 24 or 25 semester hours. All three of the introductory courses—ASB 102, ASM 104, and ASB 222 or 223—are required. Fifteen semester hours must be upper division and represent two of the three subfields:

1. sociocultural anthropology (with linguistics);
2. archaeology; and
3. physical anthropology.

The courses chosen to represent the two subfields must be drawn from the “Distribution Requirements,” page 567. A minimum grade of “C” (2.00) is required for all courses taken for the minor in Anthropology for BIS students.

CERTIFICATES

Latin American Studies Certificate or Emphasis. Students majoring in Anthropology may elect to pursue a Latin American Studies Certificate or emphasis, combining courses from the major with selected outside courses of wholly Latin American content. For more information, see “Latin American Studies,” page 512.

Certificate in Museum Studies. See the Graduate Catalog or contact the School of Human Evolution and Social Change for more information.

GRADUATE PROGRAM

The faculty in the School of Human Evolution and Social Change offer programs leading to the MA and PhD degrees. See the Graduate Catalog for requirements.

SECONDARY EDUCATION—BAE

This degree is offered through the Initial Teacher Certification program in the College of Education. Students pursuing a major in Secondary Education have an advisor in the College of Education and an advisor within the department of their academic specialization area.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

For more information, call the Office of Student Services in the College of Education at 480/965-5555.

ANTHROPOLOGY (SOCIAL AND BEHAVIORAL) (ASB)

For more ASB courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M ASB 102 Introduction to Cultural and Social Anthropology. (3) fall and spring
Principles of cultural and social anthropology, with illustrative materials from a variety of cultures. The nature of culture. Social, political, and economic systems; religion, aesthetics, and language.
General Studies: SB, G

M ASB 202 Ethnic Relations in the United States. (3) fall and spring
Processes of intercultural relations; systems approach to history of U.S. interethnic relations; psychocultural analysis of contemporary U.S. ethnic relations. Lecture, discussion. Cross-listed as AFS 202. Credit is allowed for only AFS 202 or ASB 202.
General Studies: SB, C, H

M ASB 210 Sex, Marriage, and Evolution. (3) selected semesters
Examines the sexual nature and behavior of humans from both a biological and an anthropological point of view.

M ASB 211 Women in Other Cultures. (3) selected semesters
Cross-cultural analysis of the economic, social, political, and religious factors that affect women’s status in traditional and modern societies. General Studies: HU/SB, G

M ASB 222 Buried Cities and Lost Tribes: Our Human Heritage. (3) spring
Archaeology through its most important discoveries: human origins, Pompeii, King Tut, the Holy Land, Southwest Indians, and methods of field archaeology.
General Studies: HU/SB, G, H

M ASB 223 Buried Civilizations of the Americas. (3) fall and spring
Archaeology through examination of several ancient civilizations of Meso-, South, and North America.
General Studies: HU/SB, G, H

M ASB 231 Archaeological Field Methods. (4) spring
Excavation of archaeological sites and recording and interpretation of data. Includes local field experience. 2 hours lecture, 8 hours lab. Prerequisite: instructor approval.
General Studies: SG
M ASB 240 Introduction to Southeast Asia. (3) 
Fall and Spring 
Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia. Cross-listed as GCU 240/HST 240/POS 240/REL 240. Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240. 
General Studies: SB, G 
M ASB 252 Anthropology of Sports. (3) 
Fall and Spring 
Cross-cultural examination of symbolic and social dimensions of sports past and present. 
General Studies: SB, G 
M ASB 302 Ethnographic Field Study in Mexico. (3) 
Summer 
Fieldwork study of cultural adaptation, Mexican culture, United States-Mexican cultural conflict, ethnographic research methods, and local culture. Lecture, discussion, field research. Pre- or corequisite: SPA 101 (or its equivalent). 
General Studies: L/SB, G 
M ASB 311 Principles of Social Anthropology. (3) 
Spring 
Comparative analysis of domestic groups and economic and political organizations in primitive and peasant societies. 
General Studies: SB 
M ASB 314 Comparative Religion. (3) 
Fall and Spring 
Origins, elements, forms, and symbolism of religion; a comparative survey of religious beliefs and ceremonies; the place of religion in the total culture. Prerequisite: ASB 102 or instructor approval. 
M ASB 319 The North American Indian. (3) 
Once a Year 
Archaeology, ethnology, and linguistic relationship of the Indians of North America. Does not include Middle America. Prerequisite: ASB 102 or instructor approval. 
M ASB 320 Indians of Arizona. (3) 
Selected Semesters 
Traditional cultures and the development and nature of contemporary political, economic, and educational conditions among Arizona Indians. 
M ASB 321 Indians of the Southwest. (3) 
Spring 
Cultures of the contemporary Indians of the southwestern United States and their historic antecedents. Prerequisite: ASB 102 or instructor approval. 
General Studies: SB, C, H 
M ASB 322 Peoples of Mesoamerica. (3) 
Once a Year 
Indigenous, mestizo, and national cultures, rural and urban peoples. Lecture, discussion, video. Prerequisite: ASB 102 or instructor approval. 
General Studies: SB, G 
M ASB 323 Indians of Latin America. (3) 
Fall 
Indigenous cultures of the Amazon, the Andean region, Central America, and southern Mexico. Lecture, discussion. Prerequisite: ASB 102 or instructor approval. 
General Studies: SB, G 
M ASB 324 Peoples of the Pacific. (3) 
Selected Semesters 
Peoples and cultures of Oceania focusing particularly on societies of Melanesia, Micronesia, and Polynesia. Prerequisite: ASB 102 or instructor approval. 
General Studies: G 
M ASB 325 Peoples of Southeast Asia. (3) 
Fall 
Cultural-ecological perspective on the peoples of mainland and insular Southeast Asia. Subsistence modes, social organization, and the impact of modernization. Prerequisite: ASB 102 or instructor approval. 
General Studies: G 
M ASB 326 Human Impacts on Ancient Environments. (3) 
Spring 
World survey of successful and unsuccessful ancient societies and their impacts on the environment. 
General Studies: SB, H 
M ASB 327 Action Anthropology. (3) 
Fall 
Explores contemporary issues and problem solving in Cuna, Micronesia, Mayan, and U.S. Latino communities, through applied anthropology and community initiatives. 
M ASB 330 Principles of Archaeology. (3) 
Fall and Spring 
Methods and theories for reconstructing and explaining the lifeways of prehistoric peoples. Prerequisite: 3 hours in archaeology. 
General Studies: SB 
M ASB 335 Prehistory of the Southwest. (3) 
Fall and Spring 
Anthropological understandings of major cultural processes and events in the prehistory of the American Southwest using evidence from archaeology. 
General Studies: SB, C, H 
M ASB 337 Pre-Hispanic Civilization of Middle America. (3) 
Spring 
Preconquest cultures and civilizations of Mexico, the Aztecs, Mayas, and their predecessors. 
General Studies: HU/SB, G, H 
M ASB 338 Archaeology of North America. (3) 
Selected Semesters 
Origin, spread, and development of the prehistoric Indians of North America up to the historic tribes. Does not include the Southwest. Prerequisite: ASB 222 or 223. 
General Studies: SB, H 
M ASB 350 Anthropology and Art. (3) 
Once a Year 
Art forms of people in relationship to their social and cultural setting. Prerequisite: ASB 102 or instructor approval. 
M ASB 351 Psychological Anthropology. (3) 
Spring 
Approaches to the interrelations between the personality system and the sociocultural environment. Prerequisite: ASB 102 or instructor approval. 
General Studies: SB 
M ASB 353 Death and Dying in Cross-Cultural Perspective. (4) 
Fall 
Humanistic and scientific study of aging, sickness, dying, death, funerals, and grief and their philosophy and ecology in non-Western and Western cultures, 3 hours lecture, 1 hour discussion. 
General Studies: HU/SB, G 
M ASB 355 Shamanism, Healing, and Consciousness. (3) 
Spring 
World views, practices, and roles of shamans and traditional and contemporary healers; explanatory biopsychological models of consciousness. 
General Studies: HU/SB 
M ASB 361 Pleistocene Archaeology. (3) 
Fall 
Biosocial evolution in the Pleistocene, emphasizing technological achievements and the relationship between technology and environment in western Europe, sub-Saharan Africa. Prerequisite: ASB 222 or 223. 
General Studies: H 
M ASB 362 The Neolithic Revolution and Its Consequences. (3) 
Spring 
Surveys models for the appearance of food production in the Old World, and its consequences for emergent social complexity. Prerequisite: ASB 222 or 223. 
General Studies: H 
M ASB 366 African Archaeology: Pecolatior Urban Culture. (3) 
Fall and Spring 
Overview of African civilization from the last 10,000 years up to 1850 via archaeological, documentary, and oral data. Lecture, discussion.
Cross-listed as AFS 366. Credit is allowed for only AFS 366 or ASB 366.

M ASB 368 Prehistoric and Historic Hunter-Gatherers. (3) spring
Studies known hunting and gathering societies with the goal of developing approaches to understanding past hunting and gathering societies. Lecture, discussion. Prerequisite: ASB 102 or 222.

M ASB 400 Cultural Factors in International Business. (3) spring
Anthropological perspectives on international business relations; applied principles of cross-cultural communication and management; regional approaches to culture and business. General Studies: G

M ASB 402 Visual Anthropology. (3) fall
Explores visual anthropology as a method for social documentation, and as a way to interpret cultural ways of seeing. Brings together anthropology, fine art, and art history students to exchange ideas about how we create, interpret, and communicate visual meanings. Lecture, discussion, critique.

M ASB 412 History of Anthropology. (3) fall
Historical treatment of the development of the culture concept and its expression in the chief theoretical trends in anthropology between 1860 and 1950. Prerequisite: ASB 102 or instructor approval. General Studies: L/SB

M ASB 416 Economic Anthropology. (3) fall
Economic behavior and the economy in preindustrial societies; description and classification of exchange systems; relations between production, exchange systems, and other societal subsystems. Prerequisite: ASB 102 or instructor approval. General Studies: L/SB

M ASB 417 Political Anthropology. (3) selected semesters
Comparative examination of the forms and processes of political organization and activity in primitive, peasant, and complex societies. Prerequisite: ASB 102 or instructor approval.

M ASB 462 Medical Anthropology: Culture and Health. (3) fall
Role of culture in health, illness, and curing; health status, provider relations, and indigenous healing practices in United States ethnic groups. Lecture, discussion. General Studies: C

M ASB 466 Peoples and Cultures of Africa. (3) fall and spring
Survey of African peoples and their cultures, external contact, and changes. Meets non-Western requirement. Lecture, discussion. Cross-listed as AFS 466. Credit is allowed for only AFS 466 or ASB 466. General Studies: SB, G, H

M ASB 471 Introduction to Museums. (3) fall
History, philosophy, and current status of museums. Explores collecting, preservation, exhibition, education, and research activities in different types of museums. Prerequisites: both ASB 102 and ASB 104 or only instructor approval. General Studies: L

M ASB 480 Introduction to Linguistics. (3) fall and spring
Descriptive and historical linguistics. Survey of theories of human language, emphasizing synchronic linguistics. General Studies: SB

M ASB 481 Language and Culture. (3) spring
Applies linguistic theories and findings to nonlinguistic aspects of culture; language change; psycholinguistics. Prerequisite: ASB 102 or instructor approval. General Studies: SB

M ASB 483 Sociolinguistics and the Ethnography of Communication. (3) selected semesters
Relationships between linguistic and social categories; functional analysis of language use, maintenance, and diversity; interaction between verbal and nonverbal communication. Prerequisites: both ASB 480 and ENGL 213 (or FLA 400) or only instructor approval. General Studies: SB

M ASB 485 U.S.-Mexico Border in Comparative Perspective. (3) spring in odd years
Explores the multicultural and social dimensions of communities along the U.S.-Mexico border, emphasizing social organization, migration, culture, and frontier ideology. Prerequisite: 6 hours in anthropology or instructor approval.

M ASB 489 Doing Research in Anthropology. (3) fall and spring
Research process learned through critical evaluation of literature, hands-on analysis and interpretation of data, and scientific writing. Rotating topics. May be repeated for credit. Seminar, lab. Prerequisite: instructor approval. General Studies: SB

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

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

ANTHROPOLOGY (SCIENCE AND MATHEMATICS) (ASM)

M ASM 104 Bones, Stones, and Human Evolution. (4) fall and spring

M ASM 241 Biology of Race. (3) fall and spring
Human variation and its interpretation in an evolutionary context.

M ASM 246 Human Origins. (3) fall
History of discoveries and changing interpretations of human evolution. Earliest ancestors to emergence of modern humans. Humanity’s place in nature.

M ASM 248 Bioarchaeology of Cannibalism, Violence, and Social Pathology. (3) spring
Worldwide review of claims of severely abnormal behavior in prehistory based on perimortem bone taphonomy, analogues, and comparative cases. Lecture, class demonstrations.

M ASM 301 Peopling of the World. (3) fall
Reviews all evidence for human dispersal during the last 100,000 years, origins of language, cultures, races, and beginnings of modern humans. Prerequisite: ASM 104. General Studies: SB

M ASM 338 Anthropological Field Session. (2–8) spring
Anthropological field techniques, analysis of data, and preparation of field reports. May be repeated for credit. Prerequisite: instructor approval.

M ASM 341 Human Osteology. (4) fall
Osteology, human paleontology, and osteometry. Description and analysis of archaeological and contemporary human populations. 3
hours lecture, 3 hours lab. Prerequisite: ASM 104 or instructor approval.
M ASM 342 Human Biological Variation. (4)  

spring
Evolutionary interpretations of biological variation in living human populations, with emphasis on anthropological genetics and adaptation. Nutrition and disease and their relation to genetics and behavior. 3 hours lecture, 3 hours lab. Prerequisites: both ASM 104 and MAT 106 (or its equivalent) or only instructor approval.

General Studies: SG
M ASM 343 Primatology. (3)  

fall
Evolution and adaptations of nonhuman primates, emphasizing social behavior. Includes material from fossil evidence and field and laboratory studies in behavior and biology. Prerequisite: ASM 104 or instructor approval.
M ASM 344 Fossil Hominids. (4)  

once a year
The fossil evidence for human evolution, emphasizing the concepts and methods for reconstructing the past. 3 hours lecture, 2 hours lab. Prerequisite: ASM 104 or instructor approval.

General Studies: H
M ASM 345 Disease and Human Evolution. (3)  

fall
Interaction of people and pathogens from prehistoric times to the present, with emphasis on disease as an agent of genetic selection. Prerequisite: ASM 104 or instructor approval.
M ASM 348 Social Issues in Human Genetics. (3)  

spring
Moral and social implications of developments in genetic science, particularly as they affect reproduction, medicine, and evolution.

General Studies: SG
M ASM 365 Laboratory Methods in Archaeology. (4)  

selected semesters
Techniques of artifact analysis. Basic archaeological research techniques; methods of report writing. May be repeated for credit for total of 8 hours. Prerequisite: instructor approval.
M ASM 435 Archaeological Pollen Analysis. (3)  

selected semesters
Theory, methodology, and practice of pollen analytic techniques. Compares uses in botany, geology, and archaeology. 2 hours lecture, 3 hours lab, possible field trips. Prerequisite: instructor approval.
M ASM 448 Geoarchaeology. (3)  

tail and spring
Geologic context relevant to archaeological research. Topics include sediments, deposition environments, soils, anthropogenic and biogenic deposits, and quaternary chronology. Lecture, discussion, field experiences. Prerequisites: ASB 222 (or 223) or GLG 101 (or 103) or GPH 111; instructor approval.
M ASM 450 Bioarchaeology. (3)  

spring
Surveys archaeological and physical anthropological methods and theories for evaluating skeletal and burial remains to reconstruct biocultural adaptation and lifeways. Prerequisite: ASM 104 or instructor approval.
M ASM 452 Dental Anthropology. (4)  

tail
Human and primate dental morphology, growth, evolution, and genetics. Within- and between-group variation. Dental pathology and behavioral-cultural-dietary factors. 3 hours lecture, 3 hours lab. Prerequisite: instructor approval.
General Studies: SG
M ASM 454 Comparative Primate Anatomy. (4)  

spring
Functional anatomy of the cranial, dental, and locomotor apparatus of primates, including humans, emphasizing the relation of morphology to behavior and environment. 3 hours lecture, 3 hours lab, dissections, demonstrations. Prerequisite: instructor approval.
M ASM 455 Primate Behavior Laboratory. (3)  

selected semesters
Instruction and practice in methods of observation and analysis of primate behavior. Discussion of the relationship between class work on captive animals and field techniques for studying free-ranging groups. Directed readings, 6 hours lab. Prerequisites: ASM 343; instructor approval.

General Studies: I.
M ASM 456 Infectious Disease and Human Evolution. (3)  

once a year
Study of infectious disease and humanity, using evidence from anthropology, history, medicine, and ancient skeletons. Prerequisite: ASM 345.
M ASM 465 Quantification and Analysis for Anthropologists. (3)  

spring
Statistical, quantitative, and geometric strategies for envisioning and exploring archaeological, physical anthropological, bioarchaeological, and sociocultural data. Univariate and multivariate methods. Prerequisites: introductory statistical course; instructor approval.
M ASM 472 Archaeological Ceramics. (3)  

selected semesters
Analysis and identification of pottery wares, types, and varieties. Systems for ceramic classification and cultural interpretation. 2 hours lecture, 3 hours lab. Prerequisite: instructor approval.

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

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

School of Justice and Social Inquiry  

www.asu.edu/clas/justice  

480/965-7682  

WILSN 331

Doris Marie Provine, Director

Regents’ Professor: Altheide

Professors: Cavender, Haynes, Johnson, Jurik, Lauderdale, Provine, Romero, Schneider, Zatz

Associate Professor: Adelman

Assistant Professors: Gonzales, Haglundi, Hanson, Kuchik, Lopez, Milun, Monahan, Quan

MISSION

Students pursuing the BS degree in Justice Studies find an interdisciplinary classroom experience emphasizing ideas from the social sciences, philosophy, and legal studies. The degree is designed for students interested in studying issues of justice and those desiring justice-related careers, including law. Students develop an understanding of the aspirations for justice in comparative and global terms, and analyze often controversial issues through critical inquiry and social science investigation. The faculty focus on theories of justice and injustice in three principal areas:
1. cultural transformation and justice;
2. economic justice; and
3. social justice, law, and policy.
Courses are designed to provide students with a comprehensive understanding of the substantive issues within each of these three areas and of the interrelationship and continuity among them. Students accordingly may learn about conflict and its negotiation; crime and violence; adolescents and delinquency; punishment and alternatives to punishment; globalization and inequality; and differential institutional and socioeconomic treatment of populations based on gender and sexuality, race and ethnicity, social class, and nationality.

The heart of any university program is its faculty. The School of Justice and Social Inquiry boasts a faculty with strong scholarly credentials. Faculty members include national, international, and local award recipients in research, teaching, and public service. Faculty members are committed to challenging students to develop their own understandings of justice; to analyze critically; and to propose possible solutions to a wide variety of contemporary issues concerning just distribution of resources, fair treatment for individuals and groups in local communities, the nation, and the world.

While completing the Justice Studies curriculum, students encounter opportunities to develop transferable skills, including critical thinking, oral and written discourse, computer literacy, and problem solving. Faculty encourage students to practice justice through various experiential approaches, including volunteer work, service learning, and internships. Students actively engage in their education via discussion, cooperative learning, field trips, and case-based classroom formats.

**PROFESSIONAL STATUS**

Upon admission to the university, Justice Studies students are classified as preprofessional. Justice Studies students must earn professional status before enrolling in 400-level JUS resident credit courses.

Justice Studies students achieve professional status by:

1. earning a minimum of 56 semester hours;
2. earning a minimum cumulative GPA of 2.50 (calculated on a minimum of nine semester hours earned at ASU);
3. completing the university General Studies mathematics requirement (MA);
4. completing the school’s computer science requirement (CS computer course);
5. completing the school’s communication requirement; and
6. completing the following classes with a minimum 2.50 GPA and a minimum grade of “C” in each of the following courses.

Choose between the course combinations below

<table>
<thead>
<tr>
<th>Course Combination</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 101 First-Year Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENG 102 First-Year Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105 Advanced First-Year Composition</td>
<td>3</td>
</tr>
<tr>
<td>JUS 105 Introduction to Justice Studies</td>
<td>3</td>
</tr>
<tr>
<td>or JUS 305 Principles of Justice Studies</td>
<td>3</td>
</tr>
<tr>
<td>JUS 301 Research in Justice Studies</td>
<td>3</td>
</tr>
<tr>
<td>JUS 302 Basic Statistical Analysis in Justice Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

The student must achieve professional status by the time the 87th semester hour is earned or else the student is disallowed from taking courses offered by the school. A student who transfers 58 or more semester hours must achieve professional status upon completion of 30 ASU semester hours.

**ADVISING**

Students admitted as preprofessional are advised by one of the school’s academic advisors. All students are encouraged to seek advising to formulate an appropriate educational plan.

Upon admission to the university, every undergraduate in the program receives the *Undergraduate Advisement Guide* and an evaluation of any transfer work. For more information, call the school at 480/965-7682.

**JUSTICE STUDIES—BS**

The curriculum for the BS degree in Justice Studies provides interdisciplinary social science courses relevant to law and justice for students working in the justice field, students anticipating justice-related careers (including the legal profession), and interested non-Justice Studies students.

**MINOR IN JUSTICE STUDIES**

The minor in Justice Studies is available under the following concentrations.

**Justice**

If you are interested in developing an understanding of meanings of justice and injustice and analyzing often controversial issues through critical inquiry and social science investigation.

Eighteen hours of graded classroom JUS course work are required, including JUS 105 or 305 and JUS 303. No pass/fail or credit/noncredit course work may be applied to the minor. A minimum of nine semester hours must be resident credit at Tempe campus, and at least 12 hours must be upper-division credit. Students must receive a minimum grade of “C” (2.00) for all courses in the minor and meet all course eligibility requirements, including prerequisites.

**BIS CONCENTRATION**

A concentration in Justice Studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**DEGREE REQUIREMENTS**

The faculty in the School of Justice and Social Inquiry award a BS degree upon the successful completion of a curriculum consisting of a minimum of 120 semester hours, including the university General Studies requirement.
COLLEGE OF LIBERAL ARTS AND SCIENCES

college graduation requirements, justice requirements, and electives. Additionally, the student must
1. earn professional status;
2. earn a minimum of 45 semester hours of upper-division credits;
3. complete the school’s minimum residency requirement of 24 semester hours (see the Undergraduate Advisement Guide);
4. earn a grade of “C” (2.00) or higher in all justice studies courses taken at ASU that apply to the justice studies component of the curriculum (i.e., nonelectives); and
5. meet the university’s residency and scholarship requirements.

GENERAL STUDIES REQUIREMENTS

To assure the breadth and depth of their education, all Justice Studies undergraduates must complete the university General Studies requirement and additional fundamental requirements prescribed by the College of Liberal Arts and Sciences and the School of Justice and Social Inquiry. For descriptive information on these requirements, see “General Studies,” page 93, and “College Graduation Requirements,” page 503. Note that all three General Studies awareness areas are required. Consult “General Studies Requirements” in the Schedule of Classes for an approved list of courses. The school implements the ASU continuous enrollment policy for First-Year Composition and the university mathematics (MA) requirement.

MAJOR REQUIREMENTS

The required justice studies component consists of 60 semester hours, of which 15 must be taken in a supplemental focus approved by the school. The following courses are required for all degree candidates. Equivalent courses may be substituted when appropriate.

JUS 105 Introduction to Justice Studies SB.........................3
or JUS 305 Principles of Justice Studies SB (3)
JUS 301 Research in Justice Studies SB............................3
JUS 302 Basic Statistical Analysis in Justice Studies CS........3
JUS 303 Justice Theory .....................................................3
Total ................................................................................12

Through advising, a group of Justice and Social Inquiry courses may be recommended to ensure a comprehensive exposure appropriate to the student’s interests.

Electives. The faculty encourage students to utilize the unique opportunities afforded by the university to pursue personal and educational interests, whether in the form of a broad sampling of other disciplines or the deeper probing of a single field. Specifically, the faculty suggest that students take a minimum of one course in American government, behavioral psychology, and sociology.

Transfer of Community College Credits. Credits transferred from accredited community colleges are accepted as lower-division credits up to a maximum of 64 semester hours. The acceptance of credits is determined by the director of Undergraduate Admissions, and the utilization of credits toward degree requirements is determined by the faculty of the School of Justice and Social Inquiry.

GRADUATE PROGRAMS

The faculty in the School of Justice and Social Inquiry offer the following: an MS degree in Justice Studies, a concurrent MS in JSI/MA in Anthropology, and an Interdisciplinary PhD program in Justice Studies. For more information, see the Graduate Catalog or access the Web site at www.asu.edu/clas/jus.

JUSTICE STUDIES (JUS)

M JUS Note 1. For Justice Studies students to take a nonrequired 300-level JUS course, they must have at least a “C” (2.00) in each of the required JUS courses—JUS 105 (or 305), 301, 302, and 303—and a minimum 2.50 GPA for these four classes. For non-Justice Studies students to take a 300-level JUS course, they must have a minimum of 56 earned semester hours (junior standing) and a minimum cumulative 2.00 GPA. Non-Justice Studies students may take JUS 301, 302, and 303 with school approval.

M JUS Note 2. For non-Justice Studies students to take a 400-level JUS course, they must have a minimum of 56 earned semester hours (junior standing) and a minimum cumulative 2.50 GPA. Justice Studies students must earn professional status before taking 400-level JUS resident credit courses. Justice Studies courses at the 300 and 400 level are unavailable to non-Justice Studies students during preregistration.

M JUS 105 Introduction to Justice Studies. (3)
fall, spring, summer
Introductory overview to the study of justice from a social science perspective. Primary topics include justice theories and justice research. Credit is allowed for only JUS 105 or 305. Appropriate for freshmen and sophomores. Lecture, discussion.
General Studies: SB

M JUS 200 Topics in Concepts and Issues of Justice. (3)
fall, spring, summer
Uses critical thinking skills to analyze and comprehend controversial social issues (e.g., abortion, affirmative action, capital punishment, the flat tax, and immigration). May be repeated for credit when topics vary. Lecture, discussion.
General Studies: SB

M JUS 294 Special Topics. (1–4)
freshman, sophomore
Topics chosen from various fields of justice studies.

M JUS 301 Research in Justice Studies. (3)
fall, spring, summer
Focuses on developing and evaluating research designs, data collection, and the relationship between validity and reliability. Stresses methods for conducting research. Prerequisite: Justice Studies student.
General Studies: SB

M JUS 302 Basic Statistical Analysis in Justice Studies. (3)
fall, spring, summer
Introduces the fundamentals and application of descriptive and inferential statistics, with emphasis on the justice area. Prerequisite: intermediate algebra or higher.
General Studies: CS

M JUS 303 Justice Theory. (3)
fall, spring, summer
Examines classic and contemporary philosophies and theories of justice, including legal, social, and criminal justice. See JUS Note 1.

M JUS 305 Principles of Justice Studies. (3)
fall, spring, summer
Introductory overview to the study of justice from a social science perspective. Primary topics include justice theories and justice research. Credit is allowed for only JUS 305 or 105. Appropriate for juniors and seniors. Lecture, discussion. See JUS Note 1.
General Studies: SB
M JUS 306 Police and Society. (3)
once a year
Focuses on community policing; critical inquiry of administrative
decision making; perspectives on police-citizen violence; street
practices; urban policing. Lecture, discussion. See JUS Note 1.

M JUS 308 Courts and Society. (3)
once a year
History and development of courts. Relationship between dispute
resolution mechanisms and cultural/social structure/processes in
which they are embedded. Lecture, discussion, cooperative learning,
case analysis. See JUS Note 1.

M JUS 310 Corrections and Justice. (3)
once a year
Examines the United States prison condition; types of offenders;
issues, including drugs, gangs, drunk driving, racial discrimination,
and "intermediate" punishments. Lecture, discussion. See JUS
Note 1.

M JUS 311 Crime, Prevention, and Control. (3)
once a year
Examines prevention and control of crime by a review of
contemporary theories, justice agency procedures, and social
policies. Lecture, discussion. See JUS Note 1.

M JUS 320 Community and Social Justice. (3)
once a year
Discusses and analyzes definitions of community; impact of
environment on behavior; promises of community organization for
local empowerment. Lecture, discussion. See JUS Note 1.
General Studies: SB, C

M JUS 321 Wealth Distribution and Poverty. (3)
once a year
Examines wealth and income distribution in the United States and
analyzes ideological and political forces producing an increasingly
unequal society. Lecture, discussion. See JUS Note 1.
General Studies: SB, C

M JUS 329 Domestic Violence. (3)
once a year
Legal, historical, theoretical, and treatment aspects of domestic
violence, including child abuse, woman battering, incest, and marital
rape. Lecture, discussion. See JUS Note 1.
General Studies: SB

M JUS 335 Organized Crime. (3)
once a year
Nature of organized crime and its illegal activities, theories of
containment, and efforts by justice agencies to counter its dominance
in society. Lecture, discussion. See JUS Note 1.

M JUS 345 White Collar Crime. (3)
once a year
Basic white collar concepts and categories; causes and effects;
mechanisms and contexts of operation; social and criminological
responses. Lecture, discussion. See JUS Note 1.

M JUS 350 Immigration and Justice. (3)
tail, spring, summer
Examines immigration policy, history of immigration, refugee issues,
labor force participation, gender, family, children, social networks, and
transnationalism. Lecture, discussion. See JUS Note 1.
General Studies: SB, C

M JUS 360 Law and Social Control. (3)
once a year
Resolution of social issues through the application of law as an agent
of social control. Nature, sanctions, and limits of law. Categories of law
and schools of jurisprudence. Lecture, discussion. See JUS Note 1.
General Studies: SB

M JUS 375 Justice and the Mass Media. (3)
once a year
Surveys the impact of mass media and popular culture on social
justice, including criminal justice. Lecture, discussion. See JUS
Note 1.
General Studies: SB

M JUS 385 Justice and Everyday Life. (3)
once a year
Justice and injustice in everyday life and how small things can become
legal issues. Role of language and interaction in social order. Lecture,
group work. See JUS Note 1.
General Studies: SB

M JUS 394 Special Topics. (1–3)
once a year
Topics chosen from various fields of justice studies. Lecture,
discussion. See JUS Note 1.

M JUS 404 Imperatives of Proof. (3)
once a year
Issues of evidence, rules of proof, establishing fact and identity in the
justice system. Lecture, case analysis, cooperative learning,
discussion. See JUS Note 2.
General Studies: L

M JUS 405 Economic Justice. (3)
tail and spring
Addresses economic issues and justice implications, including the
interplay among economic conditions, race-ethnicity, class, and
gender worldwide. Lecture, discussion. See JUS Note 2.
General Studies: L/JSB, G

M JUS 410 Punishment: Logic and Approach. (3)
once a year
Analyzes forms of punishment, how and why they have changed.
Areas include philosophy, history, and social structure of punishment.
Lecture, discussion. See JUS Note 2.

M JUS 415 Gender and International Development. (3)
once a year
Examines the ways in which international development is gendered as
well as women's rights as human rights in both national and
international arenas. Lecture, seminar. See JUS Note 2.
General Studies: L, G

M JUS 420 Women, Work, and Justice. (3)
once a year
Examines gender inequality in the workplace, including the nature of
women's work; theoretical issues, and models for promoting gender
justice at work. Lecture, discussion. See JUS Note 2.

M JUS 422 Women, Law, and Social Control. (3)
once a year
Examines social, economic, and legal factors that are relevant to
mechanisms of social control of women, including formal legal control
and informal control through violence. See JUS Note 2.

M JUS 425 Race, Gender, and Crime. (3)
once a year
Critically examines major theories, research findings, policies, and
controversies concerning race, ethnicity, gender, and crime. Lecture,
discussion, cooperative learning. See JUS Note 2.
General Studies: L/JSB, C

M JUS 430 Social Protest, Conflict, and Change. (3)
tail, spring, summer
Analyzes historical and contemporary protest movements advocating
equality based on race, gender, and sexual orientation. Lecture,
discussion. See JUS Note 2.
General Studies: L/JSB, C

M JUS 440 Administration and Justice. (3)
once a year
Diversity issues; procedural justice and service delivery; relationships
between state and economic forces, including processes of regulation;
state administrative apparatuses. Lecture, case analysis, cooperative
learning, discussion. See JUS Note 2.
General Studies: L

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L literacy and critical inquiry / MA mathematics / CS computer/statistics/
quantitative applications / HU humanities and fine arts / SB social and
behavioral sciences / SG natural science—general core courses / SQ natural
M JUS 444 Environment and Justice. (3) 
fall
Explores issues of environment and justice. Topics include justice and environmental racism, future generations, nonhuman life, global/non-Western societies. Lecture, discussion. See JUS Note 2. 
General Studies: L, C
M JUS 450 Alternatives to Incarceration. (3) 
once a year
Investigates various alternatives to incarceration; advantages/disadvantages; major issues, including net widening, cost effectiveness, risk assessment, community crime prevention. Lecture, research. See JUS Note 2. 
General Studies: L
M JUS 460 Feminism and Justice. (3) 
once a year
Explores feminist thought and critiques traditional political theories. Examines issues of racism, sexuality, and the law. Lecture, discussion. See JUS Note 2. 
General Studies: C
M JUS 463 Discretionary Justice. (3) 
once a year
Use/abuse, key issues/manifestations of discretion in legal system and other societal institutions. Theoretical/empirical linkages between discretion and discrimination, based on race, ethnicity, and gender. Lecture, discussion. See JUS Note 2. 
General Studies: SB
M JUS 465 Death Penalty in the United States. (3) 
fall, spring, summer
Focuses on capital punishment in the United States; explores negotiation of law, politics, morality, public policy, and culture. Lecture, discussion, case study. See JUS Note 2. 
General Studies: L
M JUS 469 Political Deviance and the Law. (3) 
once a year
Examines the controversies created by political and deviant behavior, including a critical view of law as an agent of social control. Lecture, discussion. See JUS Note 2. 
General Studies: L, C
M JUS 470 Alternative Dispute Resolution. (3) 
once a year
Critical examination of the tenets of alternative dispute resolution movement; exposure to the programs of ADR, including community and court based. Lecture, cooperative learning, field research. See JUS Note 2. 
General Studies: L/ SB, C
M JUS 474 Legislation of Morality. (3) 
once a year
Addresses historical and contemporary issues related to social justice movements, law, and morality in a pluralistic society. Issues include AIDS, burial rights, homosexuality, poverty, prostitution, and racial discrimination. See JUS Note 2. 
General Studies: L/ SB, C
M JUS 477 Youth and Justice. (3) 
once a year
Critical examination of youth-related justice issues, including economic justice, violence against youth, delinquency, and the juvenile justice system. Lecture, group work, film. See JUS Note 2. 
General Studies: L/ SB
M JUS 479 Law and Disputing. (3) 
fall and spring
Critical analysis of the controversies created by disputes, law, and other forms of social control. Lecture, discussion. See JUS Note 2. 
General Studies: L/ SB
M JUS 484 Internship. (3–6) 
fall, spring, summer
Assignments in a justice-related placement designed to further the integration of theory and practice. Internships are arranged through consultation of students with placements. Students must consult with the school for appropriate application and registration procedures. May be repeated for credit for a total of 12 semester hours, of which a maximum of 6 are applied to the major. Fee. See JUS Note 2. 
Prerequisites: major status; Justice Studies student.

M JUS 494 Special Topics. (1–3) 
once a year
Topics chosen from various fields of justice studies. Lecture, discussion. See JUS Note 2. 
M JUS 498 Pro-Seminar. (1–3) 
fall, spring, summer
Small group study and research for advanced students. May be repeated for credit for a total of 9 hours, of which a maximum of 3 are applied to the major. See JUS Note 2. Prerequisites: major status; minimum cumulative 2.75 GPA; minimum GPA in JUS courses of 3.00; instructor approval.
M JUS 499 Individualized Instruction. (1–3) 
fall, spring, summer
Original study or investigation in the advanced student's field of interest under the supervision of a faculty member. May be repeated for credit for a total of 6 hours, all applicable to the major. Readings, conferences, tutorials. Prerequisites: major status; minimum cumulative 2.75 GPA; minimum GPA in JUS courses of 3.00; instructor approval.

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

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

Department of Kinesiology

www.asu.edu/clas/kines
480/965-3875
PEBW 218

Lawrence Mandarino, Chair

Regents’ Professor: Daniel Landers
Professors: Mandarino, Matt, Stelmach
Associate Professors: Hinrichs, Ringenbach, Santello, Willis
Assistant Professors: Dounskaiia, Kulimna
Senior Lecturer: Donna Landers
Lecturers: Broman, Cataldo, Fay, Heinrichs

KINESIOLOGY—BS

The BS degree in Kinesiology consists of 38 semester hours, including 14 semester hours of required KIN core courses (KIN 110 may be repeated for credit). The remaining 24 semester hours of KIN and other courses are prescribed by the specific emphasis the student selects.

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

BIO 201 Human Anatomy and Physiology I SG ......................4
BIO 202 Human Anatomy and Physiology II ......................4
CHM 101 Introductory Chemistry SQ .................................4
MAT 210 Brief Calculus MA .............................................3
or MAT 251 Calculus for Life Sciences MA (3)

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Part B

* Students may also take KIN upper-division courses from: BCH, BIO, BME, CHM, HPS, MBB, PGS, PHY, or PSY.

KIN 494 ST: Interpretation of Exercise Electrocardiogram (3)  
KIN 498 Pro-Seminar: Kinesiology and the Future (1)  
KIN 499 Individualized Instruction (1–3)

* Other KIN courses may be substituted with advisor approval.

Human Physiology Emphasis. For the student interested in prehealth professions and those interested in biomechanical, physiological, motor control, and/or psychological mechanisms underlying human movement performance. Students interested in pursuing postbaccalaureate training in one of several possible professions in the health care industry (e.g., physical therapy, recreational therapy, occupational therapy, physician's assistant, medicine, dentistry, podiatry, or chiropractic) will have additional course work in the sciences to complete (see department for list). This emphasis consists of 24 semester hours, 15 semester hours of which must be upper-division courses. Part A and B as listed below must be completed.

Part A
Choose from among the courses below* ........................................9  
BCH 361 Principles of Biochemistry (3)  
BIO 340 General Genetics (4)  
BIO 353 Cell Biology (3)  
BIO 360 Animal Physiology (3)  
CHM 231 Elementary Organic Chemistry SQ (3)  
or CHM 233 General Organic Chemistry I (3)  
KIN 110 Research Analysis Laboratory (3)  
KIN 191 First-Year Seminar (1–3)  
KIN 334 Functional Anatomy and Kinesiology (3)  
KIN 370 Advanced First Aid (3)  
MBB 245 Cellular and Molecular Biology SQ (4)

* Students may also take other upper-division courses from: BCH, BIO, BME, CHM, HPS, MBB, PGS, PHY, or PSY.

Part B
Choose from among the courses below* ........................................15  
KIN 412 Biomechanics of the Skeletal System (3)  
KIN 414 Electromyographic Kinesiology L (3)  
KIN 421 Human Motor Control L (3)  
KIN 422 Motor Control in Special Populations L (3)  
KIN 423 Motor Control and Aging L (3)  
KIN 440 Exercise Biochemistry (3)  
KIN 442 Fuel Metabolism (3)  
KIN 443 Exercise Endocrinology L (3)  
KIN 445 Exercise Physiology for Children and Adolescents (3)  
KIN 450 Biopsychosocial Perspectives on Physical Activity and Health (3)  
KIN 452 Exercise Psychology SB (3)  
KIN 454 Internship (1–9)  
KIN 492 Honors Directed Study: Research (1–9)  
KIN 493 Honors Thesis (1–9)  
KIN 494 ST: Interpretation of Exercise Electrocardiogram (3)  
KIN 494 ST: Muscle Physiology (3)  
KIN 494 ST: Neurophysiological Bases of Movement (3)  
KIN 494 ST: Research Methods (3)  
KIN 494 ST: Voluntary and Reflex Control of Movement (3)  
KIN 498 Pro-Seminar: Kinesiology and the Future (1)

All prerequisite and KIN courses must be completed with a minimum grade of “C” (2.00). The requirements for the specific emphases are described below.

Majors must elect either the kinesiology or human physiology emphasis.

**Emphases**

Each emphasis requires 24 semester hours.

Kinesiology Emphasis. For the student interested in more applied aspects of exercise and sport performance, e.g., strength and conditioning, sports medicine, sport skill acquisition, exercise physiology, biomechanical techniques in exercise and sport, and sport psychology. This emphasis consists of 24 semester hours, 15 semester hours of which must be upper-division courses. Part A and B as listed below must be completed.

Part A

Choose from among the courses below* .................................9  
KIN 100 Introduction to Health and Wellness SB (3)  
KIN 110 Research Analysis Laboratory (1–2)  
KIN 191 First-Year Seminar (1–3)  
KIN 283 Prevention and Care of Athletic Injuries (3)  
KIN 294 ST: Research Methods I (3)  
KIN 334 Functional Anatomy and Kinesiology (3)  
KIN 348 Psychological Skills for Optimal Performance SB (3)  
KIN 370 Advanced First Aid (3)

* Students may also take KIN upper-division courses from the human physiology emphasis that are exclusive to that emphasis.

Part B

Choose from among the courses below* .................................15  
KIN 412 Biomechanics of the Skeletal System (3)  
KIN 414 Electromyographic Kinesiology L (3)  
KIN 421 Human Motor Control L (3)  
KIN 422 Motor Control in Special Populations L (3)  
KIN 423 Motor Control and Aging L (3)  
KIN 440 Exercise Biochemistry (3)  
KIN 442 Fuel Metabolism (3)  
KIN 443 Exercise Endocrinology L (3)  
KIN 445 Exercise Physiology for Children and Adolescents (3)  
KIN 450 Biopsychosocial Perspectives on Physical Activity and Health (3)  
KIN 452 Exercise Psychology SB (3)  
KIN 454 Internship (1–9)  
KIN 492 Honors Directed Study: Research (1–9)  
KIN 493 Honors Thesis (1–9)  
KIN 494 ST: Interpretation of Exercise Electrocardiogram (3)  
KIN 494 ST: Muscle Physiology (3)  
KIN 494 ST: Neurophysiological Bases of Movement (3)  
KIN 494 ST: Research Methods (3)  
KIN 494 ST: Voluntary and Reflex Control of Movement (3)  
KIN 498 Pro-Seminar: Kinesiology and the Future (1)
KIN 499 Individualized Instruction (1–9)

* Other KIN courses may be substituted with advisor approval.

MINOR IN KINESIOLOGY

The minor in Kinesiology consists of the core sequence as follows, plus all prerequisite courses:

KIN 110 Research Analysis Laboratory .......................1
KIN 200 Introduction to Kinesiology ............................2
Choose from among the courses below .................................9
KIN 335 Biomechanics (3)
KIN 340 Physiology of Exercise (3)
KIN 345 Motor and Developmental Learning (3)
KIN 352 Psychosocial Aspects of Physical Activity SB, C (3)
KIN upper-division electives* .................................................9

Total ...............................................................................................21

* Excluding KIN 305, 310, 484, 492, 493, 498, and 499.

BIS CONCENTRATION

A concentration in kinesiology is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

GRADUATE PROGRAMS

The faculty in the Department of Kinesiology offer a program leading to the MS degree in Kinesiology. The department also participates with the Division of Graduate Studies in the program leading to the PhD degree in Exercise Science. See the Graduate Catalog for requirements.

HEALTH SCIENCE (HES)

For more HES courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M HES 100 Introduction to Health and Wellness. (3)
fall and spring
Current concepts in health, exercise, and wellness. Emphasis placed on personal health, theories, attitudes, beliefs, and behaviors. Cross-listed as EXW 100/HES 100. Credit is allowed only for EXW 100 or HES 100 or KIN 100.

General Studies: SB

M KIN 100 Introduction to Health and Wellness. (3)
fall and spring
Beginning instruction in a wide variety of sports such as aerobics, aquatics, racquet sports, physical conditioning, and golf. 3 hours per week. "Y" grade only. May be repeated for credit. See KIN Notes 1, 2.

• Aerobics
  Fee.
  • Archery
  Fee.
  • Fencing
  Fee.
  • Golf
  Fee.
  • Rock Climbing
  Fee.

M KIN 110 Research Analysis Laboratory. (1–2)
fall, spring, summer
Introduces basic research areas in the discipline of kinesiology. Topics may include the following: developmental learning, exercise physiology, exercise psychology, exercise testing, metabolic physiology, motor control, motor learning, research journals and societies, research methods, research writing. May be repeated for credit. Fee. See KIN Note 1. Prerequisite: Kinesiology major.

M KIN 191 First-Year Seminar. (1–3)
fall and spring

M KIN 200 Introduction to Kinesiology. (2)
fall, spring, summer
Introduces the disciplines and professions associated with kinesiology, including an overview of historical and philosophical foundations.

M KIN 205 Physical Education Activity. (1)
fall, spring, summer
Intermediate levels. Continuation of KIN 105. 3 hours per week. May be repeated for credit. See KIN Notes 1, 2.

• Aerobics
  Fee.
  • Archery
  Fee.
  • Golf
  Fee.
  • Rock Climbing
  Fee.

M KIN 283 Prevention and Care of Athletic Injuries. (3)
selected semesters
Taping, injury recognition, emergency care, and observation procedures in athletic training. Prerequisites: BIO 201, 202.

M KIN 290 Sports Officiating. (3)
selected semesters
Rules and mechanics of officiating used in football, basketball, and volleyball.

M KIN 292 Sports Officiating. (3)
selected semesters
Rules and mechanics of officiating used in softball (slow and fast pitch), baseball, and track and field.

M KIN 305 Physical Education Activity. (1)
fall, spring, summer
Advanced levels. Continuation of KIN 205. 3 hours per week. May be repeated for credit. See KIN Notes 1, 2.

• Golf
  Fee.
  Prerequisite: instructor approval.

M KIN 310 Collegiate Sports. (1)
fall and spring
Participation in men’s or women’s intercollegiate competition. May be repeated for 4 hours, 1 per year. “Y/E” grade.

KINESIOLOGY (KIN)

M KIN Note 1. A $5.00 towel and locker fee is required each semester by students using towel and locker facilities for physical education classes and intramural activities.

M KIN Note 2. Physical education activity classes (KIN 105, 205, 305, 310) may not be taken for audit. Excessive absences and/or tardiness are considered disruptive behavior.
M KIN 334 Functional Anatomy and Kinesiology. (3) 
Spring 
Muscles, bones, joints, and nerves and how they produce movement. Emphasizes muscle origins, insertions, actions, and innervations. Lecture, lab. Prerequisite: BIO 201.

M KIN 335 Biomechanics. (3) 
Fall, spring, summer 
Basic anatomical and mechanical principles applied to human movement. Emphasizes kinematic and kinetic concepts. Lecture, recitation, lab. Fee. Prerequisites with a grade of “C” or higher: BIO 201, 202; MAT 210 (or higher); PHY 111.

M KIN 340 Physiology of Exercise. (3) 
Fall, spring, summer 
Physiological mechanisms of acute responses and chronic adaptations to exercise. Lecture, recitation, lab. Fee. Prerequisites: BIO 201, PGS 101.

M KIN 345 Motor and Developmental Learning. (3) 
Fall, spring, summer 
Principles of motor skill acquisition across the life span, focusing on the learner and the learning environment. Lecture, recitation, lab. Fee. Prerequisites: BIO 201; PGS 101.

M KIN 348 Psychological Skills for Optimal Performance. (3) 
Fall and spring 
Applies psychological techniques and their use to improve effectiveness and performance in sport and related areas. 

M KIN 352 Psychosocial Aspects of Physical Activity. (3) 
Fall, spring, summer 
Interrelationships between physical activity and psychosocial variables, including socialization, cultural values, aggression, and motivation. Includes the psychological benefits of physical activity and exercise adherence. Lecture, recitation. Prerequisite: PGS 101. 

M KIN 370 Advanced First Aid. (3) 
Selected semesters 
Assessment, management, treatment of wounds, injuries, shock, poisoning, burns, sudden illness, emergency rescue, and cardiopulmonary resuscitation. Lecture, lab. Fee.

M KIN 412 Biomechanics of the Skeletal System. (3) 
Selected semesters 
Biomechanics of tissues, structures, and major joints of the musculoskeletal system. Discussion of injury mechanisms. Lecture, discussion, some labs. Prerequisite: KIN 335 or instructor approval.

M KIN 413 Qualitative Analysis in Sport Biomechanics. (3) 
Selected semesters 
Develops systematic approach for detecting and correcting errors in human performance using anatomical and mechanical principles. 

M KIN 414 Electromyographic Kinesiology. (3) 
Selected semesters 
Muscular contributions to human movement, muscle mechanics, electrophysiological basis, and practical application of electromyography. Lecture, discussion. Fee. Prerequisites: KIN 335, 340; instructor approval.

M KIN 420 Human Motor Control. (3) 
Selected semesters 
Focuses on understanding how the human central nervous system controls, regulates, and learns movements. Prerequisite: KIN 345 or instructor approval.

M KIN 421 Motor Control in Special Populations. (3) 
Selected semesters 
Discusses principles of motor control theories and related practical applications for certain special developmental populations. Lecture, discussion. Cross-listed as PSY 422. Credit is allowed for only KIN 422 or PSY 422. Prerequisite: KIN 345.

M KIN 423 Motor Control and Aging. (3) 
Selected semesters 
Functional and behavioral changes to the motor control system as humans age, how specifically it impacts motor control and learning. Prerequisite: KIN 345 or instructor approval.

M KIN 440 Exercise Biochemistry. (3) 
Selected semesters 
Study of bioenergetics and metabolism of cellular (skeletal muscle, heart, and liver) organelles and proteins during exercise. Prerequisite: KIN 340.

M KIN 444 Metabolic Adaptations to Exercise Training. (3) 
Selected semesters 
Examines physiologic adaptations to exercise training as they relate to metabolism and tissue functions. Prerequisite: KIN 340.

M KIN 445 Exercise Physiology for Children and Adolescents. (3) 
Selected semesters 
Understanding the influence of physical growth and maturation on the development of the functional capacities of the exercising child. Credit is allowed for only KIN 445 or 536. Prerequisite: KIN 340 or instructor approval.

M KIN 579
rehabilitation procedures. Prerequisites: KIN 283, 370; CPR certification.

M KIN 492 Honors Directed Study: Research. (1–6)
selected semesters

M KIN 493 Honors Thesis. (1–6)
selected semesters

M KIN 494 Special Topics. (1–4)
selected semesters
Topics may include the following:
• Administration of Athletics, (3)
• Environmental Exercise Physiology, (3)
• Interpretation of Exercise Performance, (3)
• Motivation in Exercise and Sport, (3)
• Muscle Physiology, (3)
• Physiological Bases for Exercise and Sport, (3)
• Research and Teaching in Physical Education, (3)
• Research Methods, (3)
• Sport and Social Issues, (3)
• Voluntary and Reflex Control of Movement, (3)

M KIN 498 Pro-Seminar. (1–7)
selected semesters
Topics may include the following:
• Kinesiology and the Future, (1)

M KIN 499 Individualized Instruction. (1–3)
selected semesters

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

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

Assistant Director Academic Services: Glessner-Calkins
Distinguished Scholars: Martinez Assad, Sefchovich

BACHELOR OF ARTS DEGREE

The faculty in the Department of Languages and Literatures offer majors in Asian Languages (Chinese/Japanese), French, German, Italian, Russian, and Spanish. Each major consists of 45 semester hours, of which 30 must be in one language and 15 in a second language or in closely related fields to be approved by the advisor in consultation with the student. Of the 30 hours required for the major, a minimum of 24 hours must be taken at the 300 or 400 level and must include at least nine hours at the 400 level. For French and Spanish, all courses counting for the major must be taken at the upper-division (300 and 400) level. Specific required courses for each major area are shown in this section and in a brochure available in the department. See “College Graduation Requirements,” page 503. Consult the Languages and Literatures Web site at asu.edu/languages for assessment requirements.

MAJORS

Asian Languages (Chinese/Japanese)—BA

Students majoring in Asian Languages (Chinese/Japanese) may select a course of study that focuses on either language. The major requires 45 semester hours.

Chinese. At least nine semester hours must be at the 400 level. In addition to the courses shown below, the student must meet with an advisor and choose at least 15 semester hours of courses. Choices include six semester hours of JPN prefix courses such as Japanese language and calligraphy, Japanese Literature in Translation (FLA 421), KOR prefix courses such as Korean language and/or Korean culture, three semester hours of approved course work that provides an overview of Chinese history, or six semester hours from appropriate courses in art, humanities, social and behavioral sciences, and business.

Recommended
Two 200-level CHI courses .................................................6

Required
CHI 313 Third-Year Chinese I G .......................................3
CHI 314 Third-Year Chinese II G .......................................3
CHI 321 Chinese Literature HU.........................................3
CHI 322 Chinese Literature HU, G ...................................3
or FLA 420 Foreign Literature in Translation HU, G (3)

CHI 413 Introduction to Classical Chinese HU ..................3
CHI 414 Introduction to Classical Chinese HU ..................3
Total ..............................................................18

Electives
Choose six semester hours from the courses below.............6
• CHI 309 Chinese Conversation (2)
• CHI 310 Chinese Conversation (2)
• CHI 311 Chinese Conversation (2)
• CHI 312 Chinese Conversation (2)
• CHI 494 Special Topics (1–4)
**FRE 423 French Syntax** .............................................. 3
**FRE 421 Structure of French** ........................................ 3
**FRE 416 French Civilization II** ...................................... 3
**FRE 415 French Civilization I** ........................................ 3
**FRE 411 Advanced Spoken French** ............................... 3
**FRE 394 Special Topics** ............................................. 1–3
**FRE 325 Introduction to French Film** .............................. 3
**FRE 315 French Phonetics** ........................................... 3
**FRE 322 French Literature** ........................................... 3

Select six hours may consist of appropriate courses in art, least three semester hours must be in an approved course translation (CHI 321 and 322 and FLA 420) or KOR prefix Chinese language and calligraphy, Chinese literature in

Choose nine semester hours from the courses below ............... 9
**JPN 309 Intermediate Japanese Conversation (2)** .............. 3
**JPN 310 Intermediate Japanese Conversation (2)** .............. 3
**JPN 311 Japanese Conversation and Composition G (3)** ....... 3
**JPN 312 Japanese Conversation and Composition G (3)** ....... 3
**JPN 321 Japanese Literature L/HU, G (3)** ......................... 3
**JPN 394 Special Topics (1–4)** ................................... 3
**JPN 435 Advanced Readings (3)** ................................... 3
**JPN 485 Problems of Translation (3)** .............................. 3
**JPN 494 Special Topics (1–4)** ................................... 3
**JPN 499 Individualized Instruction (1–3)** ......................... 3

In addition to these courses, the student must meet with an advisor and choose at least 15 semester hours of related courses from appropriate social and behavioral sciences, humanities, business courses, and other language courses.

**German—BA**

**Required**

**Two 200-level GER courses** ........................................ 6
**GER 311 German Conversation G** .................................. 3
 or GER 312 German Conversation G (3)

**GER 313 German Composition G** .................................. 3
**GER 411 Advanced Grammar and Conversation G** ............ 3
**GER 412 Advanced Grammar and Composition G** ............ 3
**GER 421 German Literature HU ** .................................. 3
**GER 422 German Literature L/HU** .................................. 3

Choose six semester hours from the courses below ................. 6
**GER 394 Special Topics (1–4)** ................................... 3
**GER 415 German Civilization HU, G, H (3)** .................... 3
**GER 416 German Civilization HU, G, H (3)** .................... 3
**GER 494 Special Topics (1–4)** ................................... 3

In addition to these courses, the student must meet with an advisor and choose at least 15 semester hours of related courses from appropriate social and behavioral sciences, humanities, business courses, and other language courses.

**Italian—BA**

**Required**

**Two 200-level ITA courses** ........................................ 6
**ITA 311 Italian Composition and Conversation G** ............ 3
**ITA 312 Italian Composition and Conversation G** ............ 3
**ITA 325 Introduction to Italian Literature HU** .................. 3

**Note:** ITA 315 Italian for Business may be substituted for either ITA 311 or 312.

Fifteen semester hours are required from the following list, including at least nine semester hours from the 400 level:

**L literacy and critical inquiry / MA mathematics / CS computer/statistics/quantitative applications / HU humanities and fine arts / SB social and behavioral sciences / SG natural science—general core courses / SQ natural science—quantitative / C cultural diversity in the United States / G global / H historical / See “General Studies,” page 93.**
COLLEGE OF LIBERAL ARTS AND SCIENCES

ITA 314 Advanced Italian G .................................................3
ITA 315 Italian for Business ...............................................3
ITA 394 Special Topics ......................................................1–4
ITA 415 Italian Civilization H, G ........................................3
ITA 420 Italian Cinema ......................................................3
ITA 425 Italian American Culture L ....................................3
ITA 430 Italian Literature of the Middle Ages HU ..............3
ITA 441 Dante: Divina Commedia L/HU ............................3
ITA 443 Italian Literature of the Renaissance HU, H ..........3
ITA 446 Italian Literature of the 18th and 19th Centuries HU 3
ITA 449 20th-Century Italian Literature HU, G ..................3
ITA 494 Special Topics ......................................................1–4
ITA 499 Individualized Instruction ....................................1–3

RUS 211 Basic Russian Conversation G ..........................3
RUS 212 Basic Russian Conversation G ..........................3
RUS 311 Russian Composition and Conversation G ..........3
RUS 312 Russian Composition and Conversation G ..........3
RUS 411 Advanced Composition and Conversation I G ....3
or RUS 412 Advanced Composition and Conversation II G (3)
RUS 498 PS: Senior Seminar* ..........................................3
or SLV 498 PS: Senior Seminar (3)
SLV 304 Computational Linguistics of Slavic Languages CS 3
Total ..................................................................................21

* RUS 493 may be taken instead.

Note: Heritage speakers and other advanced speakers of Russian are, with permission from the Slavic language section head, admitted into a separate track for completion of the major. That track entails completion of 12 of the above semester hours (six semester hours of RUS 495, RUS 498 [or SLV 498], and SLV 304), to be accompanied by 18 additional semester hours. From the list below (excluding RUS 411, 412, and 417). At least 12 of the additional 18 semester hours must be at the 400 level.

Nine semester hours are required from the following list, including at least six semester hours from the 400 level:

RUS 321 Foundations of Russian Literature HU, H ............3
RUS 322 Great Russian Writers of the 19th Century L/HU ....3
RUS 323 Modern Russian Literature and the Soviet Legacy L/HU, G ..................................................3
RUS 411 Advanced Composition and Conversation I G ....3
RUS 412 Advanced Composition and Conversation II G ....3
RUS 417 Applied Russian Phonetics ................................2
RUS 420 Russian Poetry L/HU .........................................3
RUS 421 Pushkin L/HU ......................................................3
RUS 423 Dostoyevsky L/HU ..............................................3
RUS 424 Tolstoy L/HU ......................................................3
RUS 425 Chekhov L/HU ....................................................3
RUS 430 Russian Short Story L/HU ..................................3
RUS 441 Survey of Russian Culture L/HU, G, H ............3
RUS 449 Russian for Heritage Speakers ..........................3
SLV 426 Contemporary East European and Eurasian Literatures L/HU, G .....................................3
SLV 440 History of Slavic Languages SB .......................3

In addition to the 30 semester hours of course work required for the major, students majoring in Russian must take 15 additional semester hours from a list of approved courses in related fields, at least six semester hours of which must be taken at the upper-division level. Related fields courses should be chosen in consultation with an advisor. Russian majors are encouraged to take related Slavic/East European language courses in the annual summer Critical Languages Institute (CLI) courses may be applied toward the related field requirements.

Spanish—BA

Required

SPA 313 Spanish Conversation and Composition G ............3
or SPA 315 Spanish Conversation and Composition for Bilinguals (3)
SPA 314 Spanish Conversation and Composition G ............3
or SPA 316 Spanish Conversation and Composition for Bilinguals (3)
SPA 325 Introduction to Hispanic Literature HU ...............3
SPA 412 Advanced Conversation and Composition G ..........3
SPA 425 Spanish Literature HU ........................................3
Choose two courses below .............................................6
SPA 426 Spanish Literature HU (3)
SPA 427 Spanish American Literature L (3)
SPA 428 Spanish American Literature L, G (3)
Choose one course below ..............................................3
SPA 471 Civilization of the Spanish Southwest HU (3)
SPA 472 Spanish American Civilization HU, G, H (3)
SPA 473 Spanish Civilization HU/SB, G (3)
Total ..................................................................................24

Electives

Two upper-division (300–400-level) SPA courses..............6

Related Fields

POR 101 Elementary Portuguese ....................................5
POR 201 Intermediate Portuguese ..................................5

In addition to these courses, the student must meet with an advisor and choose at least six semester hours of courses from appropriate social and behavioral sciences, humanities, business, and other romance language courses.

SPA 311 and 312 are not counted toward the major or minor in Spanish.

MINORS

Each minor in Asian Languages (Chinese/Japanese), German, Italian, and Russian consists of 18 semester hours, of which 12 semester hours must be in the upper division. The Spanish and French minors require 18 upper-division semester hours. In addition, specific required courses for each area follow and are in a brochure in the department. Course substitutions are allowed for heritage and advanced speakers of the language.

Chinese

Required

Two CHI 200-level courses ..............................................6
CHI 313 Third-Year Chinese I G ....................................3
CHI 314 Third-Year Chinese II G .................................3

Consult with the departmental advisor for an additional six hours of Chinese course credit.
French

Required
FRE 311 French Conversation G ..........................................3
FRE 312 French Composition G ...........................................3
FRE 321 French Literature L/HU, H ......................................3
or FRE 322 French Literature L/HU (3)

Nine hours of upper-division French courses with at least three hours from the 400 level are also required.

German

Required
Two GER 200-level courses.................................................6
GER 311 German Conversation G..........................................3
or GER 312 German Conversation G (3)
GER 313 German Composition G ..........................................3
One 400-level GER course .....................................................3
Upper-division GER course ....................................................3

Italian

Required
ITA 201 Intermediate Italian G .............................................3
ITA 202 Intermediate Italian G .............................................3
ITA 311 Italian Composition and Conversation G .....................3
or ITA 312 Italian Composition and Conversation G (3)
or ITA 315 Italian for Business (3)
ITA 325 Introduction to Italian Literature HU ..........................3
One 300 or 400-level ITA course ...........................................3
One 400-level ITA course .....................................................3

Japanese

Required
Two 200-level JPN courses....................................................6
JPN 313 Third-Year Japanese I G ..........................................3
JPN 314 Third-Year Japanese II G .........................................3

Consult with the departmental advisor for an additional six semester hours of JPN courses.

Russian

Required
RUS 211 Basic Russian Conversation G .................................3
RUS 212 Basic Russian Conversation G ................................3
RUS 311 Russian Composition and Conversation G .................3
RUS 312 Russian Composition and Conversation G .................3

Six semester hours of upper-division RUS courses are also required.

Spanish

The minor in Spanish requires a minimum of 18 upper-division semester hours.

Required
SPA 313 Spanish Conversation and Composition G ...............3
or SPA 315 Spanish Conversation and Composition for Bilinguals (3)
SPA 314 Spanish Conversation and Composition G ...............3
or SPA 316 Spanish Conversation and Composition for Bilinguals (3)
SPA 325 Introduction to Hispanic Literature HU ....................3
SPA 412 Advanced Conversation and Composition G ............3
SPA 471 Civilization of the Spanish Southwest HU ...............3
or SPA 472 Spanish American Civilization HU, G, H (3)
or SPA 473 Spanish Civilization HU/SB, G (3)

One elective course (SPA 319 or above) ..................................3

SPA 311 and 312 are not counted toward the major or minor in Spanish.

CERTIFICATES AND EMPHASES

The following are certificate programs or emphases offered in the Department of Languages and Literatures. For more information, see “Certificate Programs and Areas of Emphasis,” page 509.

Asian Studies Certificate. Foreign language students majoring in a Southeast Asian Studies Certificate. A student must complete a minimum of 40 semester hours of course work related to Southeast Asia, including two years (20 semester hours) of a Southeast Asian language.

Translation Certificate (Spanish/English). The Translation Certificate program is designed to provide the advanced training required for professional translation in both public and private sectors, preparation for the rigorous examinations required by national and international agencies, and training as an ancillary skill for professional fields, such as international business, public health and medicine, and law, in accordance with guidelines recommended by the American Translators’ Association. The certificate is a nondegree program consisting of 15 semester hours of course work and two hours of in-service practicum primarily into the receptor language of English from the source language of Spanish. It may be taken simultaneously with course work leading to an undergraduate degree, as a related area sequence, or as the sole program of study for members of the community who meet the admission requirements of the certificate program and are enrolled in the university. A complete brochure is available at the Department of Languages and Literatures in LL 440.
Admission Requirements. Since entrance to professional translation is through work, cultural experience, and examination, the entrance requirements to this certificate program are (1) a written proficiency examination in the source and the receptor languages at the level of completion of an advanced composition course in Spanish (SPA 412) and English (ENG 301), and (2) an academic year at a university in both a Spanish-speaking country and an English-speaking country, extensive work experience using Spanish and English, or demonstrated bilingual writing competence in English and Spanish.

Certificate Requirements. The certificate program consists of the following requirements:

Prerequisites
FLA 400 Linguistics SB .........................................................3
or SPA 400 Introduction to Spanish
Linguistics (3) or equivalent

Required
FLA 401 Translation Theory and Practice .............................3
SPA 412 Advanced Conversation and Composition G ................3

In-Service Practicum
FLA 484 Internship ..............................................................2

Also required are nine hours of applied translation electives in specialized areas chosen from the following courses:

FLA 481 Technical and Scientific Translation ..........................3
FLA 482 Business and Financial Translation ...........................3
FLA 483 Medical and Legal Translation ..................................3
FLA 485 Problems of Literary Translation ..............................3

BIS CONCENTRATIONS

Students seeking to focus on a language as one of their concentration areas for the Bachelor of Interdisciplinary Studies degree may choose from Chinese, French, German, Italian, Japanese, Russian, Spanish, and translation (Spanish/English). They may also choose from any of the approved certificate programs. The requirements for the Bachelor of Interdisciplinary Studies (BIS) concentrations are the same as for the minor in that language. See “Minors,” page 582, for specific course requirements. For more information, see “School of Interdisciplinary Studies,” page 139.

SECONDARY EDUCATION—BAE

This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education (French, German, Japanese, or Spanish) have an advisor in the College of Education and an advisor within the Department of Languages and Literatures.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching.

In addition to the College of Education requirements, students must also meet the following before applying to the ITC program:

1. attain a GPA of 3.00 or higher in required specialization courses;
2. submit two one-page writing samples (one in English, one in the target language);
3. interview with the language liaison in the target language; and
4. complete courses in French, German, Japanese, or Spanish target area as listed below.

French. FRE 311, FRE 312, and an additional upper-division FRE course; or for native speakers a minimum of six hours appropriate upper-division French course work.
German. GER 201, GER 202, and one additional upper-division GER course; or for native speakers a minimum of six hours appropriate upper-division German course work.
Japanese. JPN 201, 202, and JPN 313; or for native speakers a minimum of six hours appropriate upper-division Japanese course work (JPN 321, JPN 400-level courses).
Spanish. SPA 313 and 314 or SPA 315 and 316; or for native speakers a minimum of six hours appropriate upper-division Spanish course work (SPA 325, SPA 412, or other SPA 400-level courses).

For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

French, German, Japanese, and Spanish. Each of the major teaching fields in French, German, Japanese, and Spanish consists of 45 semester hours, of which 30 must be in one language and 15 in a second language or in closely related fields to be approved by the department advisor in consultation with the student. Of the 30 hours required for the academic specialization, a minimum of 24 hours must be taken at the 300 or 400 level and must include at least nine hours at the 400 level. Specific required courses for each major area are listed in curriculum check sheets of the individual language areas available in the department or in the College of Education. FLA 479 Introduction to Teaching Foreign Languages and FLA 480 Methods of Teaching Foreign Languages are required courses.

GRADUATE PROGRAMS

The faculty in the Department of Languages and Literatures offer programs leading to the MA degree in French, German, and Spanish and the PhD degree in Spanish. See the Graduate Catalog for requirements.

FOREIGN LANGUAGE REQUIREMENT

All BA degrees in the College of Liberal Arts and Sciences require knowledge of one foreign language equivalent to the completion of two years of study at the college level. This normally includes a sequence of courses numbered 101 and 102 and 201 and 202 or 107 and 207. However, important exceptions exist in Greek, Latin, Portuguese, and Romanian.

Greek. To satisfy the foreign language requirement, students must take GRK 301 and 302.

Latin. Students must take LAT 201 before entering LAT 202 or must have completed at least three years of high school Latin before entering LAT 202 to satisfy the College of Liberal Arts and Sciences foreign language requirement.
To satisfy the foreign language requirement, students must take POR 314 or a higher numbered POR course.

To satisfy the foreign language requirement, students must complete ROM 314.

**FOREIGN LANGUAGE PLACEMENT**

Students who transfer from other postsecondary institutions with foreign language credits below the 202 level are placed in a course at the level directly above the work completed.

Students who have completed their secondary education at a school in which the language of instruction was not English are considered to have satisfied the foreign language requirement. Certification of this status is made at the time of admission to ASU. Questions should be addressed to the International Admissions program within Undergraduate Admissions. For more information, call 480/965-2688, or visit the Web site at [www.asu.edu/admissions](http://www.asu.edu/admissions).

The foreign language requirement can be met in languages not taught at ASU either by transferring credit from another institution or by passing a proficiency examination. When possible, the Department of Languages and Literatures recommends to the college an appropriate source for such examinations and proctors them. Grading is done by the institution that provides the examination, and the student pays any costs incurred. The examination can be used only to demonstrate proficiency; it does not produce semester hours of credit.

Students desiring placement above the 101-level course in French, German, or Spanish should take the placement exam for that language in the Computer Language Laboratory in LL 65, or online at [www.asu.edu/languages](http://www.asu.edu/languages).

Students who wish to continue studying languages for which high school credits have been earned are also encouraged to take the placement exam. Students should be guided by the following principles of equivalency: (1) one unit (one academic year) of high school-level study is considered, for placement purposes only, to equal one semester of study of the same language at the university level. Thus, students with one year of high school study would enroll in the second semester course (102); students with two years of high school study, in the third semester course (201), and so on. (2) Students who feel that their high school language preparation was inadequate may choose to place themselves in a lower level, but not lower than 111 with two or three years of high school study and 201 with four years of high school study.

Students with prior knowledge of a language may meet the college foreign language requirement in any one of the following ways:

1. by satisfactory results in a nonrepeatable college-approved proficiency examination;
2. by achieving a grade of at least “C” (2.00) in the last course of the required sequence; or
3. by achieving a grade of at least “C” (2.00) in a course taught in the language for which the last course of the required sequence is a prerequisite.

Students are expected to follow the progressive sequence of 100, 200, 300, or 400 level. Once a grade of “C” (2.00) or higher is earned in a 300-level class in a language, students may not earn lower-division credit in that language. Moreover, once a grade of “C” (2.00) or higher is earned in a 200-level language course, students may not earn credit in any 100-level course in that language.

First-year foreign language courses taught by the Department of Languages and Literatures are not open to students who have spent one or more years in a country where that language is the predominant language. Individual language areas may have different policies. Students with questions about this policy should check with the appropriate language coordinator in the department.

If transfer students are uncertain about course equivalencies, they should contact the Department of Languages and Literatures.

**LANGUAGE LABORATORY REQUIREMENT**

All students enrolled in 101, 102, 201, and 202 language courses are expected to spend a minimum of one hour per week in the language laboratory or in other assigned audio-lingual tape exercises in addition to the regular class periods.

**FOREIGN LANGUAGES (FLA)**

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

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

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

M FLA 150 Introduction to East Asian Culture. (3) spring Introduces the cultures of China, Japan, and Korea. General Studies: HU, G

M FLA 323 Survey of Literature of the Soviet Era in Translation. (3) fall and spring Surveys main literary movements, prominent authors, most significant works of prose, poetry, and drama of the Soviet period, 1917–1991. General Studies: L/HU, G

M FLA 385 Career Development for Language Majors. (3) selected semesters Theoretical and practical aspects of career planning and development; research focus on language-related careers. Lecture, discussion, Internet-based workshop. Prerequisites: either ENG 101 and 102 or ENG 107 and 108.

M FLA 394 Special Topics. (1–4) selected semesters Topics may include the following:
- Introduction to Teaching Foreign Languages

M FLA 400 Linguistics. (3) Spring
Introduces the analysis of language and its use in social contexts. Topics: morphology, phonology, pragmatics, semantics, syntax, and variation. Prerequisites: junior standing; instructor approval.
General Studies: SS

M FLA 401 Translation Theory and Practice. (3) selected semesters
Translation theories and professional practices and ethics; bibliography, computer technology, and sample texts for natural and social sciences and humanities. Prerequisite: 4th-year composition or instructor approval in respective language area.

M FLA 415 Bilingualism and Languages in Contact. (3) Fall
Analyzes linguistic aspects of bilingualism, e.g., pidgins and creoles, code-switching, and other contact phenomena; simultaneous/sequential bilingual language acquisition. Prerequisite: FLA 400 (or its equivalent) or instructor approval.

M FLA 420 Foreign Literature in Translation. (3) Fall and spring
Not for language majors (except in Asian languages and Russian); open to language majors as a related-area course. Graduate students by permission. Topics may include the following:
- Brazilian
- Chinese
- French
- German
- Greek
- Italian
- Latin
- Portuguese
- Russian
- Soviet
- Spanish
- Spanish American

General Studies: HU, G

M FLA 421 Japanese Literature in Translation. (3) Fall and spring
Readings selected by theme or genre or period from various works of Japanese literature in English translation. May be repeated when topics vary. Graduate students by permission. Prerequisite: a General Studies L course.

General Studies: L/HU, G

M FLA 461 Feminist Political Writing in Contemporary Europe. (3) selected semesters
Examines the discourse of gender-politics in Central Eastern Europe before and after Soviet hegemony. Cross-listed as ENG 429. Credit is allowed for only ENG 429 or FLA 461. See FLA Notes 1, 2, 3.

M FLA 464 Politics of Drama in 20th-Century Europe. (3) selected semesters
Interdisciplinary examination of European drama before and after WWII. Cross-listed as ENG 429. Credit is allowed for only ENG 429 or FLA 464. See FLA Notes 1, 2, 3.

M FLA 472 Literature and Politics in Pre- and Post-Communist Europe. (3) selected semesters
Interdisciplinary examination of the cultures of Eastern Europe from WWI to the present. Cross-listed as ENG 429. Credit is allowed for only ENG 429 or FLA 472. See FLA Notes 1, 2, 3.

M FLA 476 Literature and Film in 20th-Century Eastern Europe. (3) selected semesters
Evaluates literary texts and films as a massive propaganda machine of the totalitarian state. Cross-listed as ENG 429. Credit is allowed for only ENG 429 or FLA 476. See FLA Notes 1, 2, 3.

M FLA 479 Introduction to Teaching Foreign Languages. (3) Fall
Introduces teaching methodologies, language learning, and current best practice in teaching foreign languages in U.S. middle and high schools. Lecture, discussion, reading, micro-teaching practice. Prerequisite: admission to ITC program in College of Education or instructor approval.

M FLA 480 Methods of Teaching Foreign Languages. (3) Fall
Teaching foreign languages and literatures at secondary and college levels. Does not meet the Liberal Arts and Sciences General Studies requirement for humanities and fine arts. Required for admission to SED 478. Prerequisite: 12 hours of upper-division courses in 1 foreign language.

M FLA 481 Technical and Scientific Translation. (3) selected semesters
Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as engineering, architecture, agriculture, computer technology, electronics, and physical and biological sciences. Prerequisite: FLA 401.

M FLA 482 Business and Financial Translation. (3) selected semesters
Resources, practices, strategies, and lexicon for translation of professional texts in subjects such as economics, finance, insurance, management, marketing, accounting, advertising, and real estate. Prerequisite: FLA 401.

M FLA 483 Medical and Legal Translation. (3) selected semesters
Resources and strategies for translation of professional texts in subjects such as medicine, nursing, public health, criminal justice, and international law. May be repeated for a total of 6 semester hours. Prerequisite: FLA 401.

M FLA 484 Internship. (1–12) selected semesters
Theory and practice with emphasis on application through individual translation projects. May be repeated for a total of 6 semester hours. Prerequisite: FLA 401 or instructor approval in the respective language area.

M FLA 494 Special Topics. (1–4) selected semesters
Various topics.

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

Graduate-Level Courses. For information about courses numbered M FLA 494 Special Topics. (1–4) selected semesters

General Studies: G

M ARB 101 Elementary Arabic. (4) Fall and summer
Reading, writing, speaking, and understanding basic Arabic. 4 hours lecture, 1 hour lab. Fee.

M ARB 102 Elementary Arabic. (4) Spring and summer
Reading, writing, speaking, and understanding basic Arabic. 4 hours lecture, 1 hour lab. Fee. Prerequisite: ARB 101 (or its equivalent).

M ARB 201 Intermediate Arabic. (4) Fall
Review of Arabic grammar with emphasis on the development of the skills of listening comprehension, reading, speaking, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: ARB 102 (or its equivalent).

General Studies: G

M ARB 202 Intermediate Arabic. (4) Spring
Review of Arabic grammar with emphasis on the development of the skills of listening comprehension, reading, speaking, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: ARB 201 (or its equivalent).

General Studies: G

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

M CHI 101 First-Year Chinese I. (5)
fall and spring
Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills. Standard dialect. 5 class hours. Fee.

M CHI 102 First-Year Chinese II. (5)
fall and spring
See CHI 101. Fee, Prerequisite: CHI 101 (or its equivalent).

M CHI 201 Second-Year Chinese I. (5)
fall and spring
Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills. 5 class hours. Fee. Prerequisite: CHI 102 (or its equivalent).

M CHI 202 Second-Year Chinese II. (5)
spring
See CHI 201. Fee, Prerequisite: CHI 201 (or its equivalent).

M CHI 205 Chinese Calligraphy. (1)
fall and spring
Introduces styles and techniques of Chinese writing. Requires no knowledge of Chinese or Japanese.

M CHI 309 Chinese Conversation. (2)
fall
Aural/oral drills using contemporary stories, articles, and essays. For students with lower-level proficiency. Prerequisite: CHI 202.

M CHI 310 Chinese Conversation. (2)
spring
See CHI 309. Prerequisite: CHI 202.

M CHI 311 Chinese Conversation. (2)
fall
Intensive aural/oral practice in modern Chinese. For students who have lived in China or a Chinese-speaking environment. Discussion, drill. Prerequisite: CHI 202.

M CHI 312 Chinese Conversation. (2)
spring
See CHI 311. Discussion, drill. Prerequisite: CHI 202.

M CHI 313 Third-Year Chinese I. (3)
fall
Expansion of proficiency in listening comprehension, speaking, reading, and writing. Lecture, 3 hours discussion, drill. Prerequisite: CHI 202 (or its equivalent).

M CHI 314 Third-Year Chinese II. (3)
spring
Continuation of CHI 313. Prerequisite: CHI 313 (or its equivalent).

M CHI 321 Chinese Literature. (3)
fall
Masterworks from the tradition from the 6th century BCE through the 13th century. Readings, lectures, and examinations are in English.

M CHI 322 Chinese Literature. (3)
spring
Masterpieces from the later tradition and its transition to modern times. Readings, lectures, and examinations are in English.

M CHI 345 Chinese Film and Civilization. (3)
once a year
Screening and discussion of recent films from China, Taiwan, and Hong Kong in the context of modern Chinese civilization. Lecture, discussion, screening.

M CHI 413 Introduction to Classical Chinese. (3)
fall
Reading in various genres of pre-20th century literature (wen-yen), with analysis of the structure of the classical writings. Prerequisite: CHI 314 or instructor approval.

M CHI 414 Introduction to Classical Chinese. (3)
spring
Continuation of CHI 413. Prerequisite: CHI 413.

M CHI 494 Special Topics. (1–4)
selected semesters

M CHI 499 Individualized Instruction. (1–3)
selected semesters

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

FRENCH (FRE)

M FRE 101 Elementary French. (4)
fall, spring, summer
Intensive aural/oral drill in class and laboratory; basic grammar supplemented by simple prose readings. Credit is allowed for only FRE 101 or 111. 4 hours lecture, 1 hour lab. Fee.

M FRE 102 Elementary French. (4)
spring, summer
See FRE 101. Credit is allowed for only FRE 102 or 111. Fee. Prerequisite: FRE 101 (or its equivalent).

M FRE 107 French for International Professions. (8)
fall
Accelerated alternative to FRE 101 and 102 or FRE 111. Functional approach. Emphasizes communicative competence for international professions. Credit is allowed for only FRE 107 or 111. Fee.

M FRE 111 Fundamentals of French. (4)
fall and spring
Primarily for students with two years of high school French who need review to enter second year study. Credit is allowed for only FRE 111 or 101 or 102 or 107. 4 hours lecture, 1 hour lab. Fee.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Semester(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M FRE 201</td>
<td>Intermediate French I. (4)</td>
<td>3</td>
<td>Fall, Spring, Summer</td>
<td>Grammar review, with emphasis on development of skills of speaking, reading, writing, and listening comprehension. 4 hours lecture; 1 hour lab. Fee. Prerequisite: FRE 102 or 111 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td>M FRE 202</td>
<td>Intermediate French II. (4)</td>
<td>3</td>
<td>Fall, Spring, Summer</td>
<td>Continuation of grammar review with emphasis on development of skills in speaking, reading, writing, and listening comprehension. 4 hours lecture, 1 hour lab. Fee. Prerequisite: FRE 201 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td>M FRE 205</td>
<td>Readings in French Literature. (3)</td>
<td>3</td>
<td>Fall, Spring, Summer</td>
<td>Designed to teach reading with facility and comprehension. Vocabulary building and textual analysis of literary genres are major elements. Prerequisite: FRE 202 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td>M FRE 207</td>
<td>French for Business. (4)</td>
<td>3</td>
<td>Spring</td>
<td>Alternative to FRE 202. Functional approach. Emphasizes communicative competence for international professions. Not open to students with credit in FRE 202. Fee. Prerequisite: FRE 107 or instructor approval. General Studies: G</td>
</tr>
<tr>
<td>M FRE 311</td>
<td>French Conversation. (3)</td>
<td>3</td>
<td>Fall and Spring</td>
<td>Further practice in speaking French, emphasizing current usage and promoting facility in the expression of ideas. Prerequisite: 8 hours of 200-level French (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td>M FRE 312</td>
<td>French Composition. (3)</td>
<td>3</td>
<td>Fall and Spring</td>
<td>Further practice in writing French, emphasizing current usage and promoting facility in the expression of ideas. Prerequisite: 8 hours of 200-level French (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td>M FRE 315</td>
<td>French Phonetics. (3)</td>
<td>3</td>
<td>Fall</td>
<td>Practice and theory of French pronunciation. Emphasizes standard French, although an overview of regional varieties is offered. Lecture, lab. Prerequisite: FRE 311 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td>M FRE 319</td>
<td>Business French. (3)</td>
<td>3</td>
<td>Spring</td>
<td>Introduces the structure, vocabulary, and practices of the French business world. Prerequisite: FRE 312 or instructor approval. General Studies: G</td>
</tr>
<tr>
<td>M FRE 321</td>
<td>French Literature. (3)</td>
<td>3</td>
<td>Fall and Spring</td>
<td>Representative masterpieces and significant movements of French literature of the Middle Ages through the 18th century. Prerequisites: FRE 205, 312 (or their equivalents). General Studies: L/HU, H</td>
</tr>
<tr>
<td>M FRE 322</td>
<td>French Literature. (3)</td>
<td>3</td>
<td>Fall and Spring</td>
<td>Literature of the 19th and 20th centuries. Prerequisites: FRE 205, 312 (or their equivalents). General Studies: L/HU</td>
</tr>
<tr>
<td>M FRE 325</td>
<td>Introduction to French Film. (3)</td>
<td>3</td>
<td>Spring</td>
<td>Studies French artistic contribution from 1895 to present, with emphasis on recent films starting with the New Wave. Short lecture before film, discussion after. Prerequisite for French majors: FRE 202. General Studies: L/HU</td>
</tr>
<tr>
<td>M FRE 394</td>
<td>Special Topics. (1–4)</td>
<td>3</td>
<td>Selected Semesters</td>
<td></td>
</tr>
<tr>
<td>M FRE 411</td>
<td>Advanced Spoken French. (3)</td>
<td>3</td>
<td>Fall and Spring</td>
<td>Improvement of spoken French. Prerequisites: FRE 311 and 6 hours of 300-level French (or their equivalents). General Studies: G</td>
</tr>
<tr>
<td>M FRE 412</td>
<td>Advanced Written French. (3)</td>
<td>3</td>
<td>Fall and Spring</td>
<td>Improvement of composition skills. Prerequisites: FRE 312 and 6 hours of 300-level French (or their equivalents). General Studies: G</td>
</tr>
<tr>
<td>M FRE 415</td>
<td>French Civilization I. (3)</td>
<td>3</td>
<td>Spring</td>
<td>Political, intellectual, social, economic, and artistic development of France from its origins to the end of the 17th century. Prerequisite: 6 hours of upper-division French. General Studies: HU</td>
</tr>
<tr>
<td>M FRE 416</td>
<td>French Civilization II. (3)</td>
<td>3</td>
<td>Spring</td>
<td>Political, intellectual, social, economic, and artistic development of France from the 18th century to present. Prerequisite: 6 hours of upper-division French. General Studies: HU, G</td>
</tr>
<tr>
<td>M FRE 421</td>
<td>Structure of French. (3)</td>
<td>3</td>
<td>Fall</td>
<td>Phonology, morphology, syntax, semantics, and varieties of French. Prerequisites: both FRE 311 and 312 or only instructor approval. General Studies: HU</td>
</tr>
<tr>
<td>M FRE 422</td>
<td>Applied French Linguistics. (3)</td>
<td>3</td>
<td>Spring</td>
<td>Applies linguistic theory and second language acquisition theory to teaching of French. Prerequisite: ASB 480 or ENG 213 or FLA 400. General Studies: HU</td>
</tr>
<tr>
<td>M FRE 423</td>
<td>French Syntax. (3)</td>
<td>3</td>
<td>Spring</td>
<td>Examines French syntactic structure by contemporary theoretical models. Prerequisite: ASB 480 or ENG 213 or FLA 400. General Studies: HU</td>
</tr>
<tr>
<td>M FRE 432</td>
<td>Gay Identities in Modern French Literature. (3)</td>
<td>3</td>
<td>Spring</td>
<td>Examines the representation of homosexuals as well as the emergence of homosexuality as a theme in modern French literature. Lecture, discussion. Prerequisites: both FRE 322 and 6 hours of 300-level French or only instructor approval. General Studies: HU</td>
</tr>
<tr>
<td>M FRE 441</td>
<td>French Literature of the 17th Century. (3)</td>
<td>3</td>
<td>Fall</td>
<td>From 1600 to 1660, Prerequisites: both FRE 321 and 6 hours of 300-level French or only instructor approval. General Studies: HU</td>
</tr>
<tr>
<td>M FRE 442</td>
<td>French Literature of the 17th Century. (3)</td>
<td>3</td>
<td>Spring</td>
<td>From 1660 to 1700, Prerequisites: both FRE 321 and 6 hours of 300-level French or only instructor approval. General Studies: HU, H</td>
</tr>
<tr>
<td>M FRE 445</td>
<td>French Literature of the 18th Century. (3)</td>
<td>3</td>
<td>Spring</td>
<td>Selected Semesters. Contributions of the philosophers and the development of the novel and drama. Prerequisites: both FRE 321 and 6 hours of 300-level French or only instructor approval. General Studies: L/HU</td>
</tr>
<tr>
<td>M FRE 451</td>
<td>French Poetry of the 19th Century. (3)</td>
<td>3</td>
<td>Spring</td>
<td>From Romanticism to Parnassian poetry to Symbolism. Prerequisites: both FRE 322 and 6 hours of 300-level French or only instructor approval. General Studies: HU</td>
</tr>
<tr>
<td>M FRE 452</td>
<td>French Novel of the 19th Century. (3)</td>
<td>3</td>
<td>Fall</td>
<td>From Constant, Hugo, Balzac, Stendhal, and Sand to Flaubert and Zola, with emphasis on major literary movements. Prerequisites: both FRE 322 and 6 hours of 300-level French or only instructor approval. General Studies: HU</td>
</tr>
<tr>
<td>M FRE 453</td>
<td>Theater of the 19th Century. (3)</td>
<td>3</td>
<td>Spring</td>
<td>From Romantic drama to the Symbolist Theater. Representative plays of Hugo, Musset, Vigny, Dumas, Becque, Rostand, Feydeau, and Mirbeau. Prerequisites: both FRE 322 and 6 hours of 300-level French or only instructor approval. General Studies: L/HU</td>
</tr>
</tbody>
</table>
M FRE 461 Modern Narrative. (3)  
fall  
Representative authors from Gide to the new Nouveau Roman. Prerequisites: both FRE 322 and 6 hours of 300-level French or only instructor approval.  
General Studies: HU

M FRE 462 Modern Poetry. (3)  
spring  
Representative authors from Mallarme to Bonnefoy. Lecture, discussion. Prerequisites: both FRE 322 and 6 hours of 300-level French or only instructor approval.  
General Studies: HU

M FRE 471 The Literature of Francophone Africa and the Caribbean. (3)  
fall  
Selected prose, poetry, and drama of black authors from Africa and the Caribbean. Prerequisites: both FRE 322 and 6 hours of 300-level French or only instructor approval.  
General Studies: L/HU

M FRE 472 Franco-Canadian Civilization. (3)  
spring  
Study of the civilization of Quebec in particular through its history, language, literature, music, and customs. Prerequisite: 9 hours of 300-level French or instructor approval.  
M FRE 480 Translation Theory and Practice. (3)  
spring  
Theoretical and practical approaches to the fundamentals of meaning-based translation. Lecture, seminar. Prerequisite: FRE 412 or instructor approval.  
M FRE 485 Literary Translation. (3)  
spring  
Theory and practice of literary translation with emphasis on application through individual translation project. Prerequisite: FRE 480.  
M FRE 494 Special Topics. (1–4)  
selected semesters

M FRE 499 Individualized Instruction. (1–3)  
selected semesters

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

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

GERMAN (GER)

M GER 101 Elementary German. (4)  
fall, spring, summer  
Reading, writing, speaking, and understanding of basic German, with emphasis on pronunciation and grammar. Credit is allowed for only GER 101 or 111. 4 hours lecture, 1 hour lab. Fee.  

M GER 102 Elementary German. (4)  
fall, spring, summer  
Credit is allowed for only GER 102 or 111. Fee. Prerequisite: GER 101 (or its equivalent).

M GER 111 Fundamentals of German. (4)  
fall and spring  
Prerequisites for students with two years of high school German who need review to enter second-year study. Credit is allowed for only GER 111 or both GER 101 and 102. 4 hours lecture, 1 hour lab. Fee.

M GER 201 Intermediate German. (4)  
fall, spring, summer  
Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: GER 102 or 111 (or its equivalent).  
General Studies: G

M GER 202 Intermediate German. (4)  
fall, spring, summer  
See GER 201. Fee. Prerequisite: GER 201 (or its equivalent).  
General Studies: G

M GER 311 German Conversation. (3)  
fall  
Expansion of idiom through oral practice dealing with contemporary articles, essays, and stories. 3 semester hours limit for majors. Prerequisite: GER 202 (or its equivalent).  
General Studies: G

M GER 312 German Conversation. (3)  
spring  
See GER 311. Prerequisite: GER 202 (or its equivalent).  
General Studies: G

M GER 313 German Composition. (3)  
spring  
Intensive practice in writing, emphasizing style and grammar. Prerequisite: GER 202 (or its equivalent).  
General Studies: G

M GER 319 Business Correspondence and Communication. (3)  
selected semesters  
Organization and presentation of clear, effective business communications; vocabulary applicable to modern business usage. Prerequisite: GER 313 or instructor approval.  
General Studies: G

M GER 394 Special Topics. (1–4)  
selected semesters

M GER 411 Advanced Grammar and Conversation. (3)  
fall  
Improvement of diction and idiom through intensive oral review. Prerequisite: GER 311 or 312 (or its equivalent).  
General Studies: G

M GER 412 Advanced Grammar and Composition. (3)  
spring  
Improvement of writing ability. Prerequisite: GER 313 (or its equivalent).  
General Studies: G

M GER 415 German Civilization. (3)  
spring  
Aspects of political, social, and cultural life of the German-speaking world from the beginning through 1600. Prerequisite: a 300-level course in German or instructor approval.  
General Studies: HU, G, H

M GER 416 German Civilization. (3)  
fall  
From 1600 through 1945. Prerequisite: a 300-level course in German or instructor approval.  
General Studies: HU, G, H

M GER 421 German Literature. (3)  
fall  
From the beginning to Classicism. Prerequisite: 6 hours of 300-level German.  
General Studies: HU

M GER 422 German Literature. (3)  
spring  
From Romanticism to the present. Prerequisite: 6 hours of 300-level German.  
General Studies: L/HU

M GER 453 German Literary Masterpieces on Film. (3)  
fall, spring, summer  
Film and literature in their correlation to each other and to cultural, political, and social trends in German-speaking countries. Special arrangements for graduate students and those without a knowledge of German, Lecture, discussion.  
General Studies: HU, G

M GER 494 Special Topics. (1–4)  
selected semesters

Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
### ANCIENT GREEK (GRK)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M GRK 101 Elementary Ancient Greek</strong></td>
<td>4</td>
<td>(fall) Ancient Greek grammar and vocabulary with an emphasis on developing reading skills. For beginning students only.</td>
</tr>
<tr>
<td><strong>M GRK 201 Intermediate Ancient Greek</strong></td>
<td>4</td>
<td>(spring) Continuation of GRK 101. Ancient Greek syntax and grammar. Prerequisite: GRK 101.</td>
</tr>
<tr>
<td><strong>M GRK 301 Ancient Greek Literature I</strong></td>
<td>3</td>
<td>(fall) Readings in ancient Greek prose; advanced grammar. May be repeated for credit. Prerequisite: GRK 201. General Studies: HU</td>
</tr>
<tr>
<td><strong>M GRK 302 Ancient Greek Literature II</strong></td>
<td>3</td>
<td>(spring) Continuation of GRK 301. Readings in ancient Greek poetry. Prerequisite: GRK 301. General Studies: HU</td>
</tr>
<tr>
<td>Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.</td>
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</tbody>
</table>

### HEBREW (HEB)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M HEB 101 Elementary Modern Hebrew</strong></td>
<td>4</td>
<td>(fall) Reading, writing, speaking, and understanding of basic modern Hebrew, with emphasis on pronunciation and grammar. 4 hours lecture, 1 hour lab. Fee.</td>
</tr>
<tr>
<td><strong>M HEB 102 Elementary Modern Hebrew</strong></td>
<td>4</td>
<td>(spring) Reading, writing, speaking, and understanding of basic modern Hebrew, with emphasis on pronunciation and grammar. 4 hours lecture, 1 hour lab. Fee. Prerequisite: HEB 101 (or its equivalent).</td>
</tr>
<tr>
<td><strong>M HEB 201 Intermediate Modern Hebrew</strong></td>
<td>4</td>
<td>(fall) Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: HEB 101 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M HEB 202 Intermediate Modern Hebrew</strong></td>
<td>4</td>
<td>(spring) Intensive review of grammar, with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: HEB 201 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M HEB 313 Advanced Modern Hebrew</strong></td>
<td>4</td>
<td>(fall) Continued development of ability to communicate orally and in writing. Reading of selected literary works. Prerequisite: HEB 202 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M HEB 314 Advanced Modern Hebrew</strong></td>
<td>4</td>
<td>(spring) Continued development of ability to communicate orally and in writing. Reading of selected literary works. Prerequisite: HEB 313 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M HEB 375 Contemporary Culture of Israel</strong></td>
<td>3</td>
<td>(fall and spring) Intense study of aspects of historical, social, political, and cultural modern life in Israel. Beginning of Zionism to present day. Lecture, discussion. General Studies: HU, G</td>
</tr>
<tr>
<td>Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.</td>
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### INDOONESIAN (IDN)

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>M IDN 101 Elementary Indonesian I</strong></td>
<td>5</td>
<td>(fall) Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading. 4 hours lecture, 1 hour lab. Fee.</td>
</tr>
<tr>
<td><strong>M IDN 102 Intermediate Indonesian II</strong></td>
<td>5</td>
<td>(spring) Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading. 4 hours lecture, 1 hour lab. Fee. Prerequisite: IDN 101 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M IDN 201 Intermediate Indonesian I</strong></td>
<td>5</td>
<td>(fall) Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: IDN 102 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M IDN 202 Intermediate Indonesian II</strong></td>
<td>5</td>
<td>(spring) Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: IDN 201 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.</strong></td>
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</tr>
</tbody>
</table>

### ITALIAN (ITA)

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td><strong>M ITA 101 Elementary Italian</strong></td>
<td>5</td>
<td>(fall, spring, summer) Aural/oral drill in class and laboratory. Basic grammar supplemented by simple prose readings. 5 hours lecture, 1 hour lab. Fee.</td>
</tr>
<tr>
<td><strong>M ITA 102 Elementary Italian</strong></td>
<td>5</td>
<td>(fall, spring, summer) Aural/oral drill in class and laboratory. Basic grammar supplemented by simple prose readings. 5 hours lecture, 1 hour lab. Fee. Prerequisite: ITA 101 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M ITA 201 Intermediate Italian</strong></td>
<td>3</td>
<td>(fall, spring, summer) Systematic review of grammar. Development of vocabulary through reading, listening, speaking, and writing. 3 hours lecture, 1 hour lab. Fee. Prerequisite: ITA 102 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M ITA 202 Intermediate Italian</strong></td>
<td>3</td>
<td>(fall, spring, summer) Systematic review of grammar. Development of vocabulary through reading, listening, speaking, and writing. 3 hours lecture, 1 hour lab. Fee. Prerequisite: ITA 201 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M ITA 311 Italian Composition and Conversation</strong></td>
<td>3</td>
<td>(fall and spring) Development of writing ability and oral expression. Prerequisite: ITA 202 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M ITA 312 Italian Composition and Conversation</strong></td>
<td>3</td>
<td>(fall and spring) See ITA 311. Prerequisite: ITA 202 (or its equivalent). General Studies: G</td>
</tr>
<tr>
<td><strong>M ITA 314 Advanced Italian</strong></td>
<td>3</td>
<td>(selected semesters) Advanced grammar and composition with readings of selected literary works. Prerequisite: ITA 202 or instructor approval. General Studies: G</td>
</tr>
<tr>
<td><strong>M ITA 315 Italian for Business</strong></td>
<td>3</td>
<td>(fall) Conversation and composition course in Italian; focuses on business, culture, and communication in Italy. Readings, discussion, research, lab (computer and audio-video), Blackboard support. Prerequisite: ITA 202 or instructor approval. General Studies: HU</td>
</tr>
<tr>
<td><strong>M ITA 325 Introduction to Italian Literature</strong></td>
<td>3</td>
<td>(fall) Italian literature through the interpretation of representative works in drama, poetry, and novel. Prerequisite: ITA 202 or instructor approval. General Studies: HU</td>
</tr>
</tbody>
</table>
| **M ITA 394 Special Topics**                                         | 1–4     | (selected semesters) Topics may include the following:  
| • Commercial Italian.                                                   |         |                                                                      |

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DEPARTMENT OF LANGUAGES AND LITERATURES

M ITA 415 Italian Civilization. (3) selected semesters
General survey of history, literature, art, and music, emphasizing Italy's cultural contribution to Western civilization. Prerequisites: ITA 311, 312 (or 314).
General Studies: HU, G

M ITA 420 Italian Cinema. (3) fall
Major trends of Italian cinema from the post-war period to the present.

M ITA 425 Italian American Culture. (3) selected semesters
Analyzes representations of Italian American history and culture in several media, including literature, film, and television. Lecture, discussion.
General Studies: L

M ITA 430 Italian Literature of the Middle Ages. (3) selected semesters
Emphasizes "Stil Novo," Dante's minor works, Petrarca, and Boccaccio. Prerequisite: ITA 325 or instructor approval.
General Studies: HU

M ITA 441 Dante: Divina Commedia. (3) selected semesters
Critical reading of the three Cantiche (Inferno, Purgatorio, and Paradiso). Prerequisite: ITA 325.
General Studies: L/HU

M ITA 443 Italian Literature of the Renaissance. (3) selected semesters
Emphasizes Lorenzo de' Medici, Poliziano Castiglione, Machiavelli, Ariosto, and Tasso. Prerequisite: ITA 325 or instructor approval.
General Studies: HU, H

M ITA 446 Italian Literature of the 18th and 19th Centuries. (3) selected semesters
Goldoni, Parini, Alfieri, the poetry of Foscolo and Leopardi, and the sociohistorical novels of Foscolo, Manzoni, and Verga. Prerequisite: ITA 325 or instructor approval.
General Studies: HU

M ITA 449 20th-Century Italian Literature. (3) selected semesters
Major works, figures, and movements of contemporary Italian literature. Prerequisite: ITA 325.
General Studies: HU, G

M ITA 494 Special Topics. (1–4) selected semesters
Topics may include the following:
• Italian/American Culture. (3)

M ITA 499 Individualized Instruction. (1–3) selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

JAPANESE (JPN)

M JPN 101 First-Year Japanese I. (5) fall and spring
Communication skills and basic skills in grammar, reading, and writing, including hiragana, katakana, and about 75 kanji. 5 hours per week. Fee.

M JPN 102 First-Year Japanese II. (5) fall and spring
Continuation of JPN 101. Additional 99 kanji. Continued development of communication skills in speaking, listening, reading, writing, and culture. Fee. Prerequisite: JPN 101 (or its equivalent).

M JPN 201 Second-Year Japanese I. (5) fall and spring
Continued development of communication skills. Increased emphasis on reading and writing. Review of fundamentals of structure to increase abilities in composition and translation. 5 hours per week. Fee. Prerequisite: JPN 102 (or its equivalent).
General Studies: G

M JPN 202 Second-Year Japanese II. (5) fall and spring
Continuation of JPN 201. Fee. Prerequisite: JPN 201 (or its equivalent).
General Studies: G

M JPN 206 Calligraphy. (1) selected semesters
Introduces the practice of calligraphy in Japan, with emphasis on the derivation of Japanese kana syllabaries from Chinese characters. Prerequisite: CHI 205 or JPN 101.

M JPN 309 Intermediate Japanese Conversation. (2) fall
Practice in current usage in expression of ideas. Recommended especially for those who have not had the opportunity to practice Japanese in Japan. Prerequisite: JPN 202.

M JPN 310 Intermediate Japanese Conversation. (2) spring
Continuation of JPN 309. Prerequisite: JPN 309.

M JPN 311 Japanese Conversation and Composition. (3) fall
General Studies: G

M JPN 312 Japanese Conversation and Composition. (3) spring
See JPN 311. Prerequisite: JPN 202.
General Studies: G

M JPN 313 Third-Year Japanese I. (3) fall
Continued development of basic skills with greater emphasis on reading. JPN 313 and 314 must be taken in sequence. Prerequisite: JPN 202 (or its equivalent).
General Studies: G

M JPN 314 Third-Year Japanese II. (3) spring
Continued development of basic skills with continued emphasis on reading. JPN 313 and 314 must be taken in sequence. Prerequisite: JPN 313 or instructor approval.
General Studies: G

M JPN 321 Japanese Literature. (3) selected semesters
Readings in modern literature, changing yearly. May be repeated for credit. Prerequisite: preferably JPN 314 (or 313) or instructor approval.
General Studies: L/HU, G

M JPN 394 Special Topics. (1–4) selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

M JPN 414 Introduction to Classical Japanese. (3) spring
Readings from various genres of pre-20th-century literature, with analysis of the structure of the classical language. Prerequisite: JPN 313 or instructor approval.

M JPN 435 Advanced Readings. (3) selected semesters
Readings in history, art, religious studies, economics, or other fields. Lecture, discussion. Prerequisite: JPN 314 (or its equivalent).

M JPN 485 Problems of Translation. (3) selected semesters
Theories and practice of translation: strategies for handling a variety of Japanese texts. Lecture, discussion. Prerequisite: JPN 314 (or its equivalent).

M JPN 494 Special Topics. (1–4) selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.


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KOREAN (KOR)

M KOR 101 First-Year Korean I. (5)
fall
Pronunciation, grammar, elementary conversation, and development of basic reading and writing skills, including Han'gul. Lecture, recitation.

M KOR 102 First-Year Korean II. (5)
spring
Continuation of KOR 101. Lecture, recitation. Prerequisite: KOR 101 (or its equivalent).

M KOR 201 Second-Year Korean I. (5)
fall
Continued development of communication skills. Increased emphasis on reading and writing, vocabulary building, and review of fundamentals. Lecture, recitation. Prerequisite: KOR 102 (or its equivalent).

M KOR 202 Second-Year Korean II. (5)
spring
Continuation of KOR 201. Lecture, recitation. Prerequisite: KOR 201 (or its equivalent).

M KOR 250 Korean Culture and Society. (3)
fall
Survey of Korean culture and society, covering history, religious traditions, gender, and popular culture. Lecture, discussion.

M KOR 313 Third-Year Korean I. (3)
fall
Continued development of ability to communicate orally and in writing. Exposure to a variety of Korean written styles. Reading, writing, discussion. Prerequisite: KOR 202 (or its equivalent).

M KOR 314 Third-Year Korean II. (3)
spring
Continuation of KOR 313. Reading, writing, discussion. Prerequisite: KOR 313 (or its equivalent).

M KOR 347 Korean Film and Literature. (3)
spring
Introduces aspects of Korean history, culture, and society through Korean film and literature. Lecture, discussion.

M KOR 350 Women of Korea. (3)
spring
Examines the changing role and status of women in modern Korea in relation to political and cultural changes. Lecture, discussion.

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

LATIN (LAT)

M LAT 101 Elementary Latin. (4)
fall and spring
Basic Latin grammar with an emphasis on developing reading skills. For beginning students only.

M LAT 102 Elementary Latin. (4)
fall and spring
Continuation of LAT 101. Prerequisite: LAT 101 (or its equivalent).

M LAT 201 Intermediate Latin I. (4)
fall and spring
Final semester of grammar. Prerequisite: LAT 102 or instructor approval.

M LAT 202 Intermediate Latin II. (4)
fall and spring
Beginning reading of Latin authors. Prerequisite: LAT 201 (or its equivalent) or instructor approval.

M LAT 421 Roman Literature. (3)
fall
Readings in the Latin masterpieces. Authors read change each year in accordance with needs of the class. May be repeated for credit. Prerequisite: LAT 202 or instructor approval.

M LAT 422 Roman Literature. (3)
spring
See LAT 421. Prerequisite: LAT 202 or instructor approval.

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

MACEDONIAN (MAK)

M MAK 101 Elementary Macedonian. (4)
summer
Structural grammar, basic vocabulary; introduction and reinforcement of aural/oral, reading, and writing skills. 4 hours lecture, 1 hour lab. Lecture, lab, group activities.

M MAK 102 Elementary Macedonian. (4)
summer
See MAK 101. Lecture, lab, group activities. Prerequisite: MAK 101 (or its equivalent).

M MAK 201 Intermediate Macedonian. (4)
summer
Systematic review of grammar. Development of vocabulary through reading and writing. Drill in aural/oral skills. 4 hours lecture, 1 hour lab. Lecture, lab, group activities. Prerequisite: MAK 102 (or its equivalent).

M MAK 202 Intermediate Macedonian. (4)
summer
See MAK 201. Lecture, lab, group activities. Prerequisite: MAK 201 (or its equivalent).

M MAK 298 Macedonian Practicum. (2)
summer
On-site summer practicum in Macedonia following intensive summer Macedonian language study in the ASU Critical Languages Institute. Lecture, lab, group activities. Prerequisite: MAK 102 (or its equivalent).

M MAK 311 Macedonian Composition and Conversation. (1–8)
once a year
Advanced communicative proficiency and writing development. Intended for students enrolled in “ASU Study Abroad University of Ss. Kiril and Metodij.” Tutorial. Prerequisite: MAK 202 (or its equivalent).

M MAK 312 Macedonian Composition and Conversation. (1–8)
once a year
Advanced communicative proficiency and writing development. Intended for students enrolled in “ASU Study Abroad University of Ss. Kiril and Metodij.” Tutorial. Prerequisite: MAK 202 (or its equivalent).

M MAK 411 Advanced Macedonian Composition and Conversation. (1–8)
once a year
Improves self-expression in oral and written skills, emphasizing vocabulary building and use of newspapers and other materials published in Macedonia. Tutorial. Prerequisite: MAK 312 (or its equivalent).

M MAK 412 Advanced Macedonian Composition and Conversation. (1–8)
once a year
Improves self-expression in oral and written skills, emphasizing vocabulary building and use of newspapers and other materials published in Macedonia. Tutorial. Prerequisite: MAK 411 (or its equivalent).

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

NORWEGIAN (NOR)

M NOR 101 Elementary Norwegian. (4)
fall
Reading, writing, speaking, and understanding of basic Norwegian. 4 hours lecture, 1 hour lab. Fee.
M NOR 102 Elementary Norwegian. (4)  
fall and spring  
Basic grammar with intensive drills in class and laboratory directed toward conversational fluency. 4 hours lecture, 1 hour lab. Fee. Prerequisite: NOR 101 (or its equivalent).

M NOR 201 Intermediate Norwegian. (4)  
fall  
Reviews Norwegian grammar with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: NOR 102 (or its equivalent).

M NOR 202 Intermediate Norwegian. (4)  
spring  
Reviews Norwegian grammar with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: NOR 201 (or its equivalent).

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

PORTUGUESE (POR)  
M POR 101 Elementary Portuguese. (5)  
fall and spring  
Basic grammar with intensive drills in class and laboratory directed toward conversational fluency. 5 hours lecture, 1 hour lab. Fee. Prerequisite: 1 year of Spanish or French or Italian or instructor approval.

M POR 201 Intermediate Portuguese. (5)  
fall and spring  
Continuation of POR 101. Intensive drill of fundamentals in class and laboratory directed toward conversational fluency. 5 hours lecture, 1 hour lab. Fee. Prerequisite: POR 101 or instructor approval.  
General Studies: G

M POR 313 Portuguese Composition and Conversation. (3)  
fall  
Develops skill in written Portuguese and corrected oral expression. Must be taken in sequence. Prerequisite: POR 201 or instructor approval.  
General Studies: G

M POR 314 Portuguese Composition and Conversation. (3)  
spring  
Continuation of POR 313. Required of Portuguese majors.  
General Studies: HU

M POR 321 Luso-Brazilian Literature. (3)  
selected semesters  
Representative masterpieces of Portuguese and Brazilian literature from the beginning to the present. Prerequisite: POR 313 or instructor approval.  
General Studies: HU

M POR 472 Luso-Brazilian Civilization. (3)  
selected semesters  
Lectures, readings, and discussion of important aspects of Luso-Brazilian civilization. Topics from music, art, folklore, literature, history, and politics. Prerequisite: POR 313 or instructor approval.  
General Studies: HU, G

M POR 494 Special Topics. (1–4)  
selected semesters  
Topics may include the following:  
• Advanced Portuguese Composition and Conversation. (3)  
• Brazilian Film. (3)  
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

ROMANIAN (ROM)  
M ROM 101 Elementary Romanian. (5)  
fall and spring  
Basic grammar with intensive drills in class and laboratory directed toward conversational fluency. 5 hours lecture, 1 hour lab.

M ROM 201 Intermediate Romanian. (5)  
fall and spring  
Continuation of ROM 101. Intensive drill of fundamentals in class and laboratory directed toward conversational fluency. 5 hours lecture, 1 hour lab. Fee. Prerequisite: ROM 101 or instructor approval.

M ROM 313 Romanian Composition and Conversation. (3)  
fall and spring  
Develops skills in written Romanian and correct oral expression. Must be taken in sequence with ROM 314. Prerequisite: ROM 201 or instructor approval.

M ROM 314 Romanian Composition and Conversation. (3)  
spring  
Continuation of ROM 313. Develops skills in written Romanian and correct oral expression. Must be taken in sequence. Prerequisite: ROM 313 or instructor approval.

M ROM 494 Special Topics. (1–4)  
once a year  
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

RUSSIAN (RUS)  
M RUS 101 Elementary Russian. (4)  
fall, spring, summer  
Structural grammar and basic vocabulary. Introduces and reinforces aural/oral reading and writing skills. 4 hours lecture, 1 hour lab. Fee.

M RUS 102 Elementary Russian. (4)  
spring and summer  
See RUS 101. Fee. Prerequisite: RUS 101 (or its equivalent).

M RUS 201 Intermediate Russian. (4)  
fall and summer  
Systematic review of grammar. Develops vocabulary through reading and writing. Drill in aural/oral skills. 4 hours lecture, 1 hour lab. Fee. Prerequisite: RUS 102 (or its equivalent).  
General Studies: G

M RUS 202 Intermediate Russian. (4)  
spring and summer  
See RUS 201. Fee. Prerequisite: RUS 201 (or its equivalent).  
General Studies: G

M RUS 211 Basic Russian Conversation. (3)  
fall  
Intensive aural/oral drill to supplement reading and grammatical skills acquired in RUS 101, 102, 201, and 202. Fee. Prerequisite: RUS 102.  
General Studies: G

M RUS 212 Basic Russian Conversation. (3)  
spring  
See RUS 211. Fee. Prerequisite: RUS 102.  
General Studies: G

M RUS 311 Russian Composition and Conversation. (3)  
fall  
Develops writing ability and oral expression. Prerequisite: RUS 202.  
General Studies: G

M RUS 312 Russian Composition and Conversation. (3)  
spring  
See RUS 311. Fee. Prerequisite: RUS 202.  
General Studies: G

M RUS 321 Foundations of Russian Literature. (3)  
selected semesters  
Literary movements, prose, poetry, and drama from early Kievan writings to 19th-century works of Pushkin, Lermontov, Gogol. Does not satisfy the CLAS language requirement for the BA degree. Open to nonmajors. Prerequisite: readings in translation.  
General Studies: HU, H

M RUS 322 Great Russian Writers of the 19th Century. (3)  
selected semesters  
Surveys the great age of prerevolutionary Russian prose, including works of Gogol, Turgenev, Dostoevski, Tolstoy, and Chekhov. Does not satisfy the CLAS language requirement for the BA degree. Open to nonmajors. Prerequisite: RUS 202 or instructor approval.  
General Studies: HU, H

M RUS 481 Russian Literature. (3)  
selected semesters  
Surveys the major Russian writers of the last century.  
General Studies: HU, H

M RUS 494 Special Topics. (1–4)  
selected semesters  
Topics may include the following:  
• Russian poetry. (3)  
• Russian film. (3)  
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
satisfy the CLAS language requirement for the BA degree. Open to nonmajors. Prerequisite: readings in translation.

General Studies: L/HU

M RUS 426 Contemporary East European and Eurasian Literatures. (3)
selected semesters
Readings in non-Russian literatures and literary criticism from Eastern Europe and Eurasia: Milosz, Mrozek, Kísk, Andric, Kadare, Ajtmatov. Lecture, discussion.
General Studies: L/HU, G

M RUS 430 Russian Short Story. (3)
selected semesters
Detailed study of representative works of the Russian short story genre. Includes authors from both Imperial and Soviet Russia. Prerequisite: RUS 312 or instructor approval.
General Studies: L/HU

M RUS 441 Survey of Russian Culture. (3)
selected semesters
Interplay of artistic, social, and political forces in the development of Russian culture from the Kievan period to the present. Exclusive use of Russian language source materials. Prerequisite: RUS 312 or instructor approval.
General Studies: L/HU, G, H

M RUS 490 Individualized Instruction. (1–3)
selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

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

SCANDINAVIAN (SCA)

M SCA 250 Introduction to Scandinavian Culture. (3)
spring
Scandinavian identity from an interdisciplinary perspective with historic overview. Lecture, discussion.
General Studies: HU, G, H

M SCA 315 Old Norse. (3)
fall and spring
Readings and study of grammatical structures of Medieval Scandinavian with emphasis on the Sagas and Edda poetry and historical writings.

M SCA 316 Scandinavian Cinema. (3)
spring
Scandinavian literature in translation in its cultural and historical contexts.

M SCA 450 Masterpieces of Scandinavian Literature. (3)
spring
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

SLAVIC (SLV)

M SLV 304 Computational Linguistics of Slavic Languages. (3)
spring
Information technology and Slavic languages, including Web design, digitalized resources, information retrieval, math/statistical analysis, and PERL. Lecture, lab. General Studies: CS

M SLV 425 Contemporary East European and Eurasian Literatures. (3)
selected semesters
Comparative evolution of East Slavic, West Slavic, and South Slavic languages from the earliest record to the standardizing of national languages in the 19th and 20th centuries. Lecture, discussion.
General Studies: SB

M SLV 440 History of Slavic Languages. (3)
selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
SPANISH (SPA)

For more SPA courses, see the "Course Prefixes" table, or access www.asu.edu/ead/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M SPA Note 1. Students who have completed their secondary education in a school where Spanish was the official language of instruction should begin their studies at the 325 level or above. No student who has completed more than two years of high school in a Spanish-speaking country, where Spanish is the medium of instruction in the school, is allowed to register in a Spanish language class below the 400 level.

M SPA 101 Elementary Spanish. (4) fall, spring, summer
Fundamentals of the language. Emphasizes listening, speaking, reading, and writing. Credit is allowed for only SPA 101 or 111. 4 hours lecture, 1 hour lab. Fee. See SPA Note 1.
M SPA 102 Elementary Spanish. (4) fall, spring, summer
See SPA 101. Credit is allowed for only SPA 102 or 111. Fee. See SPA Note 1. Prerequisite: SPA 101 (or its equivalent).
M SPA 107 Spanish for International Professions I. (8) fall
Accelerated program alternative to SPA 101, 102 sequence. Functional approach to needs of international professions. Fee. See SPA Note 1.
M SPA 111 Fundamentals of Spanish. (4) fall and spring
Primarily for students with two years of high school Spanish who need review to enter second-year study. Credit is allowed for only SPA 111 or both SPA 101 and 102. 4 hours lecture, 1 hour lab. Fee. See SPA Note 1.
M SPA 201 Intermediate Spanish. (4) fall, spring, summer
Continuation of fundamentals. Emphasizes the development of the skills of reading, listening comprehension, speaking, writing, and culture. 4 hours lecture, 1 hour lab. Fee. See SPA Note 1. Prerequisite: SPA 102 or 111.
General Studies: G
M SPA 202 Intermediate Spanish. (4) fall, spring, summer
See SPA 201. Fee. See SPA Note 1. Prerequisite: SPA 201 (or its equivalent).
General Studies: G
M SPA 203 Intermediate Spanish for Bilinguals. (4) fall
For Spanish-speaking students, in lieu of SPA 201. Composition, literature, conversation, grammar fundamentals. 4 hours lecture, 1 hour lab. Fee. See SPA Note 1. Prerequisite: SPA 102 or 111 or placement examination.
General Studies: G
M SPA 204 Intermediate Spanish for Bilinguals. (4) spring
For Spanish-speaking students, in lieu of SPA 202. Composition, literature, conversation, grammar fundamentals. 4 hours lecture, 1 hour lab. Fee. See SPA Note 1. Prerequisite: SPA 203 (or its equivalent).
General Studies: G
M SPA 207 Spanish for International Professions II. (8) spring
Continuation of SPA 107, alternative to SPA 201, 202 sequence. Expansion of communicative proficiency in specific areas of international professions. Fee. See SPA Note 1. Prerequisite: SPA 107 or instructor approval.
General Studies: G
M SPA 311 Spanish Conversation. (3) fall and spring
Designed primarily for nonmajors to promote vocabulary building and communicative expression in Spanish through discussions based on cultural readings. See SPA Note 1. Prerequisite: SPA 202 (or its equivalent).
M SPA 312 Spanish Conversation. (3) fall and spring
See SPA 311. See SPA Note 1. Prerequisite: SPA 311 (or its equivalent).
M SPA 313 Spanish Conversation and Composition. (3) fall, spring, summer
Designed to develop skill and accuracy in spoken and written Spanish. Required of majors: SPA 313 and 314 must be taken in sequence. See SPA Note 1. Prerequisite: SPA 202 (or its equivalent).
General Studies: G
M SPA 314 Spanish Conversation and Composition. (3) fall, spring, summer
See SPA 313. See SPA Note 1. Prerequisite: SPA 313 (or its equivalent).
General Studies: G
M SPA 315 Spanish Conversation and Composition for Bilinguals. (3) fall
See SPA 311. See SPA Note 1. Prerequisite: SPA 315 (or its equivalent).
M SPA 319 Business Correspondence and Communication. (3) selected semesters
Organization and presentation of clear, effective business communications; vocabulary applicable to modern business usage. See SPA Note 1. Prerequisite: SPA 314 or 316 or instructor approval.
General Studies: G
M SPA 325 Introduction to Hispanic Literature. (3) fall and spring
Critical approach to and analysis of literary types, including poetry, drama, short story, and novel. Required of all majors. See SPA Note 1. Prerequisite: SPA 313.
General Studies: HU
M SPA 400 Introduction to Spanish Linguistics. (3) fall
Introduces the discipline and methods of linguistics through the study of Spanish data. Prerequisite: SPA 412 (or its equivalent).
M SPA 412 Advanced Conversation and Composition. (3) fall and spring
Oral and written Spanish communication skills, with particular attention given to developing fluency and facility. Required of majors. Prerequisite: SPA 314 or 316 or instructor approval.
General Studies: G
M SPA 413 Advanced Spanish Grammar. (3) fall
Intensive analysis of the Spanish language. Required of teaching majors. Prerequisite: SPA 314 or 316 or instructor approval.
General Studies: G
M SPA 417 Spanish Phonetics and Phonology. (3) fall
Introduces the theory and practice of Spanish phonetics and phonology. Prerequisite: SPA 412.
M SPA 420 Applied Spanish Linguistics. (3) spring
Applies linguistic principles to the teaching of Spanish. Prerequisites: FLA 400 (or its equivalent); SPA 412. General Studies: L
M SPA 421 Spanish in the Southwest. (3) fall
Discussion and linguistic analysis of Southwest Spanish. Prerequisite: SPA 412.
General Studies: L/SB, C

M SPA 422 Spanish Lexicology and Lexicography. (3) fall
Explores the linguistic theory and methodology related to the defining of meanings of words in Spanish dictionaries. Prerequisite: SPA 412 or instructor approval.

M SPA 425 Spanish Literature. (3) fall and spring
Surveys Spanish literature from its beginning to 1700. Prerequisite: SPA 325.
General Studies: HU

M SPA 426 Spanish Literature. (3) fall and spring
Surveys Spanish literature from 1700 to the present. Prerequisite: SPA 325.
General Studies: HU

M SPA 427 Spanish American Literature. (3) selected semesters
Surveys major works, figures, and movements from Colonial period to 1880. Prerequisite: SPA 325.
General Studies: L, G

M SPA 428 Spanish American Literature. (3) fall and spring
Surveys major works, figures, and movements from 1880 to the present. Prerequisite: SPA 325.
General Studies: L, G

M SPA 429 Mexican Literature. (3) selected semesters
Selected readings from pre-Columbian writers/poets (e.g., Macuicilochitl) through the novel of the Revolution to the present. Prerequisite: SPA 325.

M SPA 434 Drama of the Golden Age. (3) spring
Dramatic works of Lope de Vega, Calderón de la Barca, and their contemporaries. Prerequisite: SPA 325.

M SPA 435 Cervantes—Don Quijote. (3) fall
Don Quijote and the development of the novel. Prerequisite: SPA 325.

M SPA 454 19th-Century Spanish American Narrative. (3) fall
Principal works in the novel, short story, narrative fiction, and narrative (Gauchesque) poetry. Prerequisite: SPA 325.

M SPA 456 20th-Century Spanish American Fiction. (3) spring
Major works and movements. Prerequisite: SPA 325.

M SPA 456 Mexican American Literature. (3) fall
Representative literature in Spanish and English by Mexican Americans, emphasizing sociocultural as well as literary values. Prerequisite: SPA 325.
General Studies: HU, C

M SPA 471 Civilization of the Spanish Southwest. (3) spring
Political, intellectual, social, economic, and artistic development of the Spanish-speaking people of the Southwest. Prerequisite: SPA 314 or 316 or instructor approval.
General Studies: HU, C

M SPA 472 Spanish American Civilization. (3) fall
Growth of the institutions and cultures of Spanish American people. Prerequisite: SPA 314 or 316 or instructor approval.
General Studies: HU, G

M SPA 473 Spanish Civilization. (3) spring
Political, intellectual, social, economic, and artistic development of the Spanish nation from its origin to the present. Prerequisite: SPA 314 or 316 or instructor approval.
General Studies: HU/BS, G

M SPA 474 Mexican Culture. (3) fall and spring
Examines diverse aspects of Mexican culture since the 1910 Revolution. Lecture, discussion. Prerequisite: SPA 325.

M SPA 485 Mexican American Short Story. (3) selected semesters
Critical study of contemporary short stories by Mexican American authors, with emphasis on their Spanish-language writings. Prerequisite: SPA 325 or instructor approval.

M SPA 486 Mexican American Novel. (3) selected semesters
Social and literary contexts of representative novelists, emphasizing their Spanish-language writings. Prerequisite: SPA 325 or instructor approval.

M SPA 487 Mexican American Drama. (3) selected semesters
Representative dramatic works, with emphasis on the history and development of this genre from its regional origins to the present. Prerequisite: SPA 325 or instructor approval.

M SPA 494 Special Topics. (1–4) selected semesters
Topics may include the following:
- Lexicography. (3)
- Introduction to Hispanic Linguistics. (3)

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

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

SWEDISH (SWE)

M SWE 101 Elementary Swedish. (4) fall
Reading, writing, speaking, and understanding of basic Swedish. 4 hours lecture, 1 hour lab, Fee.

M SWE 102 Elementary Swedish. (4) spring
Reading, writing, speaking, and understanding of basic Swedish. 4 hours lecture, 1 hour lab. Fee. Prerequisite: SWE 101 (or its equivalent).

M SWE 201 Intermediate Swedish. (4) fall
Reviews Swedish grammar with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: SWE 102 (or its equivalent).

M SWE 202 Intermediate Swedish. (4) spring
Reviews Swedish grammar with emphasis on the development of the skills of speaking, listening comprehension, reading, and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: SWE 201 (or its equivalent).

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

THAI (THA)

M THA 101 Elementary Thai I. (5) fall
Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose readings in Thai script. 4 hours lecture, 1 hour lab, Fee.

M THA 102 Elementary Thai II. (5) spring
Basic communication, reading, and writing skills. Intensive oral/aural classroom drill supplemented by prose reading. 4 hours lecture, 1 hour lab. Fee. Prerequisite: THA 101 (or its equivalent).

M THA 201 Intermediate Thai I. (5) fall
Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing. 4 hours lecture, 1 hour lab. Fee. Prerequisite: THA 102 (or its equivalent).

M THA 202 Intermediate Thai II. (5) spring
Systematic review of grammar. Continued development of communication skills with increased emphasis on reading and writing.
4 hours lecture, 1 hour lab. Fee. Prerequisite: THA 201 (or its equivalent).

General Studies: G

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

VIETNAMESE (VTN)

M VTN 101 Elementary Vietnamese I. (5)  
fall  
Basic skills in modern conversational Vietnamese and development of basic reading and writing skills, with special emphasis on tones. 4 hours lecture, 1 hour lab.

M VTN 102 Elementary Vietnamese II. (5)  
spring  
Basic skills in modern conversational Vietnamese and development of basic reading and writing skills, with special emphasis on tones. 4 hours lecture, 1 hour lab. Prerequisite: VTN 101 (or its equivalent).

M VTN 201 Intermediate Vietnamese I. (5)  
fall  
Improves speaking, listening, reading, and writing competence through dialogues, reading passages, pattern drill, and grammar and communicative exercises. 4 hours lecture, 1 hour lab. Prerequisite: VTN 101 (or its equivalent).

General Studies: G

M VTN 202 Intermediate Vietnamese II. (5)  
spring  
Improves speaking, listening, reading, and writing competence through dialogues, reading passages, pattern drill, and grammar and communicative exercises. 4 hours lecture, 1 hour lab. Prerequisite: VTN 201 (or its equivalent).

M VTN 321 Advanced Vietnamese and Literature I. (3)  
fall  
Readings from modern, contemporary, and folk literatures as well as current periodicals. Lecture, discussion, Internet, student presentations, debate. Prerequisite: VTN 202 (or its equivalent) or instructor approval.

General Studies: G

M VTN 322 Advanced Vietnamese and Literature II. (3)  
spring  
Continuation of VTN 321. Readings from modern, contemporary, and folk literatures as well as current periodicals. Lecture, discussion, Internet, student presentations, debate. Prerequisite: VTN 321 (or its equivalent) or instructor approval.

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

Ulman Professors: Collins, Hedrick


Associate Professors: Armendt, Chang, Clark, Escalante, Fewell, Garcia-Pichel, Goldstein, Hoffman, Hogue, Kinzig, Kumar, Mason, McGregor, Neuer, Newfield, Orchinik, Pigg, Ramakrishna, Rauls, Roberson, Slater, Stout, Stromberg, Szarek, Towill

Assistant Professors: Amdam, Anderies, Chen, Crook, DeNardo, Gadau, Gerber, Haydel, Kim, Laubichler, Liebig, McGraw, Minteer, Mor, Rhoads, Robert, Rosenberg, Sabo, Touchman, Verrelli, Wilson-Rawls, Wojciechowski

Clinical Professors: Downs, Mass

Clinical Associate Professor: Roberts

Clinical Assistant Professor: Lefevre

Research Professors: Cardineau, Davidson, Hoober, Mahoney, Pearson

Associate Research Professors: Lopez, Pettit

Assistant Research Professors: Bertram, Eggink, Hope, Hu, Luo, Walmsley

Senior Research Scientists: Bingham, Landrum, LoBrutto

Curator: Gill

Senior Research Professional: Kazliek

BIOLOGY—BS

The major in Biology consists of a minimum of 37 semester hours in biology, and a minimum of 16 semester hours in related fields, plus a three-semester-hour calculus course, and a three-semester-hour statistics course. One upper-division PLB or MIC course is also required. A minimum grade of “C” (2.00) is required for all course work in the major and related fields. Required major courses are

BIO 187 General Biology I

BIO 188 General Biology II

BIO 340 General Genetics

BIO 341 Genetic Analysis

BIO 345 Organic Evolution

Choose one of the courses below: .................................3–4

BIO 320 Fundamentals of Ecology

BIO 331 Animal Behavior

BIO 370 Vertebrate Zoology

BIO 385 Comparative Invertebrate Zoology

School of Life Sciences

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LSC 226

Robert E. Page Jr., Director

Ronald L. Rutowski,  
Associate Director for Undergraduate Programs

Jim Elser,  
Associate Director for Research and Training Initiation

Jon Harrison,  
Associate Director for Facilities

Regents’ Professors: Alcock, Arntzen, Maienschein, Pyne

Foundation Professor: Page

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BIO 414 Research Colloquium in Biology and Society II* .................................... 4

4. three to four hours of an approved course in statistics.

**CLINICAL LABORATORY SCIENCES—BS**

The Clinical Laboratory Sciences degree program prepares individuals to practice in the field of clinical laboratory sciences, which includes the major disciplines of clinical chemistry, hematology, immunohematology, immunology, and microbiology. Employment opportunities exist in hospital, private, physician, and research laboratories and in government, sales, management, and education. After obtaining a BS degree in Clinical Laboratory Sciences, the graduate is eligible for national certification by examination.

A major in Clinical Laboratory Sciences consists of 40 semester hours in clinical laboratory sciences courses. A minimum grade of “C” (2.00) is required in all course work in the major or related fields. Also required are the following courses:

**BCH 361 Principles of Biochemistry** ............................................................ 3

**BCH 360 Animal Physiology** ................................................................. 3

**CHM 113 General Chemistry I SQ** ....................................................... 4

**CHM 114 General Chemistry with Qualitative Analysis SQ** .................... 5

**CHM 115 General Chemistry with Qualitative Analysis SQ** .................... 5

**CHM 231 Elementary Organic Chemistry SQ** ......................................... 3

**CHM 233 General Organic Chemistry I (3)**

**CHM 235 Elementary Organic Chemistry Laboratory SQ** ................... 1

**CHM 236 General Organic Chemistry II (3)**

**CHM 237 General Organic Chemistry Laboratory I (1)**

**CHM 238 General Organic Chemistry Laboratory II (1)**

**MAT 251 Calculus for Life Sciences MA** ................................................ 3

**or MAT 210 Brief Calculus MA (3)**

**or any other calculus course approved by an advisor**

Choose between the combinations of introductory courses below:  

1. 12 hours of upper-division electives from BIO, MIC, PLB;
2. 12 hours of upper-division interface courses from an approved list. At least three semester hours in each of these areas: ethics, history and philosophy of science, and contemporary societal issues;
3. 11 hours of physical sciences (CHM recommended); and
4. three to four hours of an approved course in statistics.

*Both BCH 361 and 235 must be taken to secure SQ credit.

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

Choose the combinations of introductory courses above:  

1. 12 hours of upper-division electives from BIO, MIC, PLB;
2. 12 hours of upper-division interface courses from an approved list. At least three semester hours in each of these areas: ethics, history and philosophy of science, and contemporary societal issues;
3. 11 hours of physical sciences (CHM recommended); and
4. three to four hours of an approved course in statistics.
Completion of the degree is dependent upon acceptance of the student into the accredited professional study program, which consists of 40 hours of clinical laboratory sciences courses. The university does not guarantee all students to be accepted into the professional study program due to space limitations at the clinical affiliates and restrictions of program accreditation. For more information on acceptance procedures and program standards, contact the school for a program brochure. For proper course planning, students must meet with a clinical laboratory sciences advisor.

CONSERVATION BIOLOGY—BS

The major in Conservation Biology consists of a minimum of 41 semester hours in the required major courses and a minimum of 16 hours in related fields, plus a three-semester-hour calculus course and a three-semester-hour statistics course. A minimum grade of “C” (2.00) is required for all course work in the major and related fields. Required courses are as follows:

- BIO 187 General Biology I SQ.................................................4
- BIO 188 General Biology II SQ ............................................4
- BIO 317 Conservation Biology ...........................................3
- BIO 320 Fundamentals of Ecology .......................................3
- BIO 340 General Genetics....................................................4
- CHM 231 Elementary Organic Chemistry SQ* (3)
- CHM 234 General Organic Chemistry I (3)
- CHM 235 General Organic Chemistry II (3)
- CHM 236 General Organic Chemistry Laboratory I (1)
- CHM 237 General Organic Chemistry Laboratory II (1)
- MIC 206 Microbiology Laboratory SQ*...............................1
- MIC 220 Biology of Microorganisms ....................................3
- MIC 302 Advanced Bacteriology Laboratory L3 ..................2
- MIC 360 Bacterial Physiology .............................................3
- MIC 401 Research Paper L3..............................................1
- Total ..................................................................................... 30

The remaining hours to bring the total to 41 are selected from among relevant upper-division courses in BIO and PLB courses or in related departments, in consultation with an advisor. Required courses in related fields plus math proficiency are as follows:

- CHM 113 General Chemistry I SQ .......................................4
- CHM 115 General Chemistry with Qualitative Analysis SQ* ...5
- CHM 116 General Chemistry II SQ (4)
- CHM 220 Biology of Microorganisms ...................................3
- CHM 231 Elementary Organic Chemistry SQ* (3)
- CHM 234 General Organic Chemistry I (3)
- CHM 235 General Organic Chemistry II (3)
- MAT 251 Calculus for Life Sciences MA ..............................3
- MAT 210 Brief Calculus MA (3)
- STP 226 Elements of Statistics CS ......................................3
- or STP 231: Statistics for Biosciences (3)
- Total ..................................................................................... 18 or 23

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

MICROBIOLOGY—BS

The BS degree in Microbiology consists of a minimum of 41 semester hours in microbiology and 17 hours in approved related fields. A minimum grade of “C” (2.00) is required for all course work in the major and related fields. Required courses are as follows:

- BIO 187 General Biology I SQ .................................................4
- BIO 188 General Biology II SQ ............................................4
- BIO 340 General Genetics....................................................4
- CHM 231 Elementary Organic Chemistry SQ* (3)
- CHM 235 General Organic Chemistry Laboratory SQ* (1)
- CHM 236 General Organic Chemistry Laboratory I (1)
- CHM 237 General Organic Chemistry Laboratory II (1)
- MAT 251 Calculus for Life Sciences MA ......................4
- or CHM 116 General Chemistry II SQ (4)
- PHY 111 General Physics SQ*..........................3
- PHY 112 General Physics SQ* ............................................3
- PHY 113 General Physics Laboratory SQ* .................1
- PHY 114 General Physics Laboratory SQ* ......................1
- Total ..................................................................................... 16 or 17

* Both PHY 111 and 113 or PHY 112 and 114 must be taken to secure SQ credit.
MOLECULAR BIOSCIENCES AND BIOTECHNOLOGY—BS

The BS degree in Molecular Biosciences and Biotechnology is designed to prepare students for productive careers in rapidly expanding areas within the life sciences, such as biotechnology, medicine, and biomedical research or any area of biology at the molecular and cellular level. Courses and faculty are drawn primarily from the School of Life Sciences and the Department of Chemistry and Biochemistry.

The major in Molecular Biosciences and Biotechnology consists of a minimum of 59 semester hours of course work plus two courses in mathematics specifically designed for this program. A minimum grade of “C” (2.00) is required for all course work in the major. The required major courses (30 total semester hours) are as follows:

- BIO 340 General Genetics ..............................................4
- MBB 245 Cellular and Molecular Biology SQ ............4
- MBB 247 Applied Biosciences: Biotechnology ..........4
- MBB 343 Genetic Engineering and Society L ..............4
- MBB 484 Internship .........................................................6
  or MBB 499 Individualized Instruction (6)
- MBB 490 Capstone: Issues in Biotechnology L .............4
- MIC 206 Microbiology Laboratory SQ* ..................2
- MIC 220 Biology of Microorganisms .......................3

Total ..................................................................................30

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

Choose at least one of the following courses (or combinations) for a minimum of three to four semester hours. Although only one advanced lab course is required, students are encouraged to take two:

- BIO 451 Cell Biotechnology Laboratory .....................3
- MBB 350 Applied Genetics .....................................4
- MBB 445 Techniques in Molecular Biology/Genetics ....2
- MBB 446 Techniques in Molecular Biology/Genetics Lab 2
- MIC 420 Immunology: Molecular and Cellular Foundations
  3
- MIC 421 Experimental Immunology 2 ..........................2
- MIC 441 Bacterial Genetics ........................................3
- MIC 442 Bacterial Genetics Laboratory 3 .................1

1 Both MIC 446 is taken with MBB 445.
2 MIC 421 is taken with MIC 420.
3 MIC 442 is taken with MIC 441.

Required supplemental courses in biology, chemistry, mathematics and physics (28 total semester hours) are as follows (a minimum grade of “C” (2.00) is required for all course work):

- BCH 361 Principles of Biochemistry .........................3
- BCH 367 Elementary Biochemistry Laboratory ..........1
- CHM 113 General Chemistry I SQ .........................4
- CHM 115 General Chemistry with Qualitative Analysis SQ 5

Choose between the organic chemistry course combinations below .................................................4 or 8

- CHM 231 Elementary Organic Chemistry SQ 1 (3)
- CHM 235 Elementary Organic Chemistry Laboratory SQ 1 (1)
  — or —
- CHM 233 General Organic Chemistry I (3)
- CHM 234 General Organic Chemistry II (3)
- CHM 237 General Organic Chemistry Laboratory I (1)
- CHM 238 General Organic Chemistry Laboratory II (1)

MAT 251 Calculus for Life Sciences MA ..........................3
PHY 111 General Physics SQ* .........................................3
PHY 112 General Physics SQ* .........................................3
PHY 113 General Physics Laboratory SQ* ......................1
PHY 114 General Physics Laboratory SQ* ......................1

Total ..................................................................................28 or 32

1 Both CHM 231 and 235 must be taken to secure SG credit.
2 Both PHY 111 and 113 must be taken to secure SG credit.
3 Both PHY 112 and 114 must be taken to secure SG credit.

Satisfaction of the university computer/statistics/quantitative applications requirement is met with MAT 351 Mathematical Methods for Genetic Analysis, or MAT/BIO 394 ST: Introduction to Computational Molecular Biology, in which a minimum grade of “C” (2.00) is required.

Additional courses are available in the life or physical sciences for elective credit.

PLANT BIOLOGY—BS

The School of Life Sciences offers three options to meet the needs of students whose interests are in the rapidly expanding areas within plant biology. Students may choose the general program option, which allows the opportunity to develop strength in one area or discipline. Others may choose to design a more specific, but interdisciplinary, program in one of the following two optional concentrations: environmental science and ecology; plant biochemistry and molecular biology.

Each concentration promotes interaction between diverse groups and captures the growing interdisciplinary nature of scientific investigations. When one of these options is chosen, the title will appear on transcripts and other university documents.

The three curricular options prepare students for careers in technical, industrial, and educational fields as well as professional degree programs in medicine or research and postgraduate education in the life sciences.

General Program

The BS degree in Plant Biology consists of a minimum of 38 semester hours in plant biology and approved life science and physical science courses. A minimum grade of “C” (2.00) is required for all course work in the major and related fields. Required courses are as follows:

- BIO 320 Fundamentals of Ecology .................................3
- or BIO 340 General Genetics (4)
- BIO 353 Cell Biology .....................................................3
- PLB 200 Biology of Plants SQ* .................................3
- PLB 201 Biology of Plants Laboratory SQ* ....................1
- PLB 308 Plant Physiology .............................................4
- PLB 484 Internship .........................................................3
- or PLB 499 Individualized Instruction (3)

Total ..................................................................................21–22

* Both PLB 200 and 201 must be taken to secure SQ credit.

The remaining hours to bring the total to 38 are selected from among relevant courses in plant biology, other life sciences, and physical sciences in consultation with an advisor.
Required supplemental courses in chemistry and mathematics are as follows (a minimum grade of “C” [2.00] is required for all course work):

CHM 113 General Chemistry I SQ...............................4
CHM 115 General Chemistry with Qualitative Analysis SQ........5

Choose between the organic chemistry course combinations below ........................................4 or 8

CHM 231 Elementary Organic Chemistry SQ* (3)
CHM 235 Elementary Organic Chemistry Laboratory SQ* (1)

— or —

CHM 233 General Organic Chemistry I (3)
CHM 234 General Organic Chemistry II (3)
CHM 237 General Organic Chemistry Laboratory I (1)
CHM 238 General Organic Chemistry Laboratory II (1)
MAT 251 Calculus for Life Sciences MA …………………..3

Total ....................................................................................................................24

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

One of the following courses is also required:

PLB 430 Statistical Analyses in Environmental Science CS ……3
or PLB 432 Computer Applications in Biology CS (3)
or BIO 415 Biometry CS (4)

Special Concentration Programs

Two special concentration programs are optional. Students who wish to pursue the general program in Plant Biology are not obligated to choose one of these specific programs. Each special concentration program is expected to be interdisciplinary and contain course work outside both Plant Biology and the College of Liberal Arts and Sciences. Each concentration includes hands-on technical training.

Environmental Science and Ecology. The BS degree in Plant Biology with a concentration in environmental science and ecology consists of a minimum of 44 semester hours in plant biology and approved life science and physical science courses. A minimum grade of “C” (2.00) is required for all course work in the major and related fields. Required courses are as follows:

BIO 320 Fundamentals of Ecology …………………..3

Choose between the geology course combinations below……………..4

GLG 101 Introduction to Geology I (Physical) SQ, G1 (3)
GLG 103 Introduction to Geology I—Laboratory SQ1 (1)

— or —

GLG 110 Geologic Disasters and the Environment SG, G2 (3)
GLG 111 Geologic Disasters Laboratory SQG (1)

— or —

GPH 111 Introduction to Physical Geography SQ (4)
PLB 200 Biology of Plants SQ3………………………..3
PLB 201 Biology of Plants Laboratory SQ3…………………..1
PLB 310 The Flora of Arizona………………………………4
PLB 322 Environmental Science (Major) ……………………..3
PLB 420 Plant Ecology: Organisms and Populations ………….3
or PLB 421 Plant Ecology: Communities and Ecosystems (3)
PLB 484 Internship ………………………………………….3
or PLB 499 Individualized Instruction (3)

Total ................................................................................................................…24

The remaining hours to bring the total to 44 are selected from among relevant courses in plant biology, other life sciences, and physical sciences.

CHM 113 General Chemistry I SQ...............................4
CHM 115 General Chemistry with Qualitative Analysis SQ........5
CHM 231 Elementary Organic Chemistry SQ*………………..3
CHM 235 Elementary Organic Chemistry Laboratory SQ*………1
MAT 251 Calculus for Life Sciences MA ……………………..3

Total ................................................................................................................…16

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

One of the following courses is also required:

PLB 430 Statistical Analyses in Environmental Science CS ……3
or PLB 432 Computer Applications in Biology CS (3)
or BIO 415 Biometry CS (4)
or STP 420 Introductory Applied Statistics CS (3)

Plant Biochemistry and Molecular Biology. The BS degree in Plant Biology with a concentration in biochemistry and molecular biology consists of 56 semester hours. A minimum grade of “C” (2.00) is required for all course work in the major and related fields.

The required major courses are as follows:

BIO 353 Cell Biology …………………………………………..3
MBB 245 Cellular and Molecular Biology SQ…………………..3
PLB 308 Plant Physiology ……………………………………..4
PLB 350 Applied Genetics ……………………………………3
PLB 444 Plant Growth and Development ……………………..3
PLB 484 Internship …………………………………………..3
or PLB 499 Individualized Instruction (3)

Total ................................................................................................................…21

Required supplemental courses in biochemistry, chemistry, mathematics, and physics are as follows (a minimum grade of “C” (2.00) is required for all course work):

Choose between the course combinations below……………..4 or 9

BCH 361 Principles of Biochemistry (3)
BCH 367 Elementary Biochemistry Laboratory (1)

— or —

BCH 461 General Biochemistry (3)
BCH 462 General Biochemistry (3)
BCH 467 Analytical Biochemistry Laboratory L (3)
CHM 113 General Chemistry I SQ………………………..4
CHM 115 General Chemistry with Qualitative Analysis SQ ………..5
CHM 231 Elementary Organic Chemistry SQ*…………………..3
CHM 235 Elementary Organic Chemistry Laboratory SQ*…………1
MAT 251 Calculus for Life Sciences MA ……………………..3
PHY 111 General Physics SQ2 ………………………………………3
PHY 112 General Physics SQ3 ………………………………………3
PHY 113 General Physics Laboratory SQ2 ……………………………1
PHY 114 General Physics Laboratory SQ3 ……………………………1

Total ................................................................................................................…28 or 33

1 Both CHM 231 and 235 must be taken to secure SQ credit.
2 Both PHY 111 and 113 must be taken to secure SQ credit.
3 Both PHY 112 and 114 must be taken to secure SQ credit.
The remaining hours to bring the total to 56 are selected from among relevant courses in plant biology, other life sciences, and physical sciences.

One of the following courses is also required:
BIO 406 Computer Applications in Biology CS.................3
or MAT 351 Mathematical Methods for Genetic Analysis CS (3)

HEALTHCARE ORGANIZATIONS AND SOCIETY CERTIFICATE

The certificate program is designed to allow undergraduates interested in healthcare and the healthcare industry to access a broad range of disciplinary approaches and issues relevant to the subject.

To complete the certificate, students must take 18 semester hours of course work. Before starting the program students should seek advice and information in the School of Life Sciences Student Services Office in the College of Liberal Arts and Sciences or Business Honors advising in the W. P. Carey School of Business.

The course work must conform to the following structure and must be drawn from the three areas listed below. Additional courses are permissible with the approval of an advisor. In addition, students must meet the following requirements:

1. complete 18 semester hours, 12 of which must be in the upper division;
2. earn a “C” or higher in all upper-division courses taken for the certificate; and
3. complete at least 12 of the semester hours for the certificate in residence at ASU.

Overview of the U.S. Healthcare Industry. HSM 220 Healthcare Organizations is required. HSM 498 PS: Healthcare Economics is required for business students. HSM 561 Biostatistics may be taken by petition. No more than three courses in this area may be taken.

Ethical and Legal Issues in Healthcare. PHI 320 Bioethics is required. A second course is also required, PAF 460 Public Service Ethics or HSM 498 PS: Legal and Ethical Issues in Healthcare. No more than three courses in this area may be taken.

Anthropological, Historical, and Social Perspectives on Healthcare. One course is required. No more than two courses in this area may be taken, from among ASB 462 Medical Anthropology: Culture and Health, HPS 331 History of Medicine, and SOC 427 Sociology of Health and Illness.

For more information, visit the School of Life Sciences in LSC 206, or call 480/727-6277. Or visit Business Honors in the W. P. Carey School of Business in BA 150, or call 480/965-8710.

HISTORY AND PHILOSOPHY OF SCIENCE CERTIFICATE

The School of Life Science offers an undergraduate History and Philosophy of Science Certificate. The certificate program is designed to give students an understanding of both traditional philosophic issues surrounding science and the historical development of concrete scientific theories and ideas. The philosophic questions, of the belief-worthiness and interpretation of scientific claims as well as norms within or about science, both enrich and are enriched by their combination with historical study. Such philosophic and historical study will also often include the examination of contemporary sciences and their place within the larger society.

The certificate requires 18 semester hours bearing an HPS or PHI prefix, of which at least nine must bear the HPS prefix. HPS 314 or PHI 314 Philosophy of Science is also required. All courses counting toward the certificate must be approved for this purpose by a School of Life Sciences academic advisor and passed with a grade of “C” (2.00) or higher.

MINOR

Biological Sciences

The Biological Sciences minor is designed to provide students interested in biology with a flexible curriculum that can be tailored to their interests. The minor consists of 24 semester hours, including BIO 187 General Biology I and BIO 188 General Biology II. PLB 201 Biology of Plants and PLB 201 Biology of Plants Laboratory or MIC 206 Microbiology Laboratory and MIC 220 Biology of Microorganisms may together be substituted for BIO 188 or 187. Alternatively, MBB 245 Cellular and Molecular Biology may be substituted for BIO 188. The remaining 16 hours are selected by the student with the approval of an advisor. At least 12 of these 16 hours must be in upper-division courses in the life sciences. Courses not available for credit in the Life Science majors cannot be used for the minor (e.g., BIO 100 The Living World and BIO 201 Human Anatomy and Physiology I). This minor is not available to students majoring in the life sciences.

Any one of these combinations may be used:

1. BIO 187 and BIO 188,
2. BIO 187 and PLB 201 and 201,
3. BIO 188 and PLB 201 and 201,
4. BIO 187 and MIC 206 and 220,
5. BIO 188 and MIC 206 and 220, or
6. BIO 187 and MBB 245.

BIS CONCENTRATIONS

Concentrations in biological sciences, history and philosophy of science, and health care organizations and society are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. The requirements for the BIS concentrations are the same as for the minor or certificate in that area. For more information, see “School of Interdisciplinary Studies,” page 139.
SECONDARY EDUCATION—BAE

This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education have an advisor in the College of Education and an advisor within the School of Life Sciences.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

Academic Specialization ITC Admission Requirements.

The following courses must be completed with a grade of “C” (2.00) or higher before applying to the ITC professional program:

BIO 187 General Biology I SQ
BIO 188 General Biology II SQ

In addition, at least 12 hours of biology course work from the major teaching field may be in progress when applying to the ITC but must be completed before starting the program.

Biological Sciences. The academic specialization requires 61 hours, and six hours in teaching methods. A minimum grade of “C” (2.00) is required for all course work in the major and related fields. Required major courses are as follows:

BIO 187 General Biology I SG
BIO 188 General Biology II SQ
BIO 320 Fundamentals of Ecology
BIO 340 General Genetics
BIO 345 Organic Evolution
BIO 360 Animal Physiology
BIO 370 Vertebrate Zoology

or BIO 385 Comparative Vertebrate Zoology
or PLB 300 Comparative Plant Diversity
or PLB 310 The Flora of Arizona

MIC 205 Microbiology SG
MIC 220 Biology of Microorganisms

MIC 206 Medical Microbiology Laboratory SG
PLB 308 Plant Physiology

Electives

Total

1 Both MIC 205 and 206 must be taken to secure SG credit.
2 Electives should be selected from BIO, MIC, and PLB courses. BIO 100, 201, 202, 241, 300, and 319, or PLB 108 and 320 cannot be used to fulfill the elective requirement.

Required supporting courses are as follows:

BIO 316 History of Biology: Conflicts and Controversies H
BIO 330 History of Biology: Conflicts and Controversies H
CHM 113 General Chemistry I SQ
CHM 116 General Chemistry with Qualitative Analysis SQ
GLG 102 Introduction to Geology II (Historical) SG
GLG 300 Geology of Arizona
MAT 170 Precalculus MA
PHY 101 Introduction to Physics SQ

and PHY 113, 114 General Physics Laboratory SQ

Minimum total

1 Both GLG 102 and 104 must be taken to secure SG credit.
2 Both PHY 111 and 113 or PHY 112 and 114 must be taken to secure SQ credit.

Teaching Methods

BIO 480 Methods of Teaching Biology
BIO 482 Advanced Methods of Teaching Biology

Total

Graduate Programs

The School of Life Sciences offers programs leading to the degrees of Master of Natural Sciences, MS, and PhD. See the Graduate Catalog for requirements. A combined BS-MS degree in Biology is also available.

MOLECULAR AND CELLULAR BIOLOGY

The school participates in the interdisciplinary program for the MS and PhD degrees in Molecular and Cellular Biology as well.

The interdisciplinary MS and PhD degrees with a major in Molecular and Cellular Biology are administered by the Interdisciplinary Committee on Molecular and Cellular Biology. The participating faculty are drawn primarily from the School of Life Sciences and the Department of Chemistry and Biochemistry, with additional faculty from the Department of Physics and Astronomy and the School of Human Evolution and Social Change.

For more information, contact the director or see the Graduate Catalog.

BIOLOGY (BIO)

For more BIO courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M BIO 100 The Living World
M BIO 187 General Biology I
M BIO 188 General Biology II

BS-MS degree in Biology is available.
M BIO 193 The Nature of Biological Science. (4) selected semesters Creative and critical thinking skills in biological research; nature of biological knowledge; role of experimentation, predictions, hypotheses, theories, values. Lecture, lab, discussion. Fee. Prerequisite: high school biology. General Studies: SQ

M BIO 201 Human Anatomy and Physiology I. (4) fall, spring, summer Structure and dynamics of the human mechanism. Cannot be used for major credit in the biological sciences. 3 hours lecture, 3 hours lab. Fee. General Studies: SQ

M BIO 202 Human Anatomy and Physiology II. (4) fall, spring, summer Continuation of BIO 201. Cannot be used for major credit in the biological sciences. 3 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 201 or instructor approval.

QM BIO 300 Natural History of Arizona. (3) selected semesters Plant and animal communities of Arizona. Cannot be used for major credit in the biological sciences. Prerequisite: junior standing.

M BIO 301 Field Natural History. (1) selected semesters Organisms and their natural environment. Cannot be used for major credit in the biological sciences. 2 weekend field trips, field project. Fee. Pre- or corequisite: BIO 300.

M BIO 302 Cancer and Heart Disease. (3) fall Incidence and mortality statistics for cancer and heart disease; host and environmental risk factors; diagnosis, treatment and prevention strategies. Cannot be counted toward a Biology major. Prerequisites: a combination of CHM 231 (or its equivalent) and 12 hours in life sciences and a General Studies L course or only instructor approval. General Studies: L

M BIO 303 Radiation and Life. (3) spring Benefits and risks of radiation exposure in society; medical applications, food irradiation, nuclear power, solar UV, population health effects. Cannot be counted toward a Biology major. Prerequisites: a combination of CHM 231 (or its equivalent) and 12 hours in life sciences and a General Studies L course or only instructor approval. General Studies: L

M BIO 304 Radiation Medicine and Biology. (3) fall Uses of radiation in medicine, including CT, diagnostic x rays, MRI, nuclear medicine, ultrasound biological effects of radiation with emphasis on cancer. Prerequisites: a combination of PHY 112 and 12 hours in life sciences and a General Studies L course or only instructor approval. General Studies: L

M BIO 310 Special Problems and Techniques. (1–3) fall and spring Qualified undergraduates may investigate a specific biological problem under the direction of a faculty member. May be repeated for a total of 6 semester hours. Prerequisites: formal conference with the instructor; approval of the problem by the instructor and department chair.

M BIO 311 Biology and Society. (3) fall Explores interactions between biological sciences and society, e.g., biomedical, environmental, ethical, historical, legal, philosophical, political, and social issues. Lecture, discussion. Cross-listed as HPS 340. Credit is allowed for only BIO 311 or HPS 340. Prerequisites: both BIO 187 and 188 or only BIO 193 (or 100).

M BIO 314 Research Colloquium in Biology and Society I. (2) spring Develops critical thinking abilities, research methods, and writing skills for research in the interactions between biological sciences and society. Lecture, discussion. Prerequisite: BIO 311 or instructor approval. General Studies: L (if credit also earned in BIO 414)

M BIO 315 HIV/AIDS: Science, Behavior, and Society. (3) fall and spring Overview of the basic biological, behavioral, and psychosocial aspects of HIV disease and AIDS. Prerequisite: any 100-level MIC, BIO, or PLB course.

M BIO 316 History of Biology: Conflicts and Controversies. (3) selected semesters Focuses on 19th and 20th centuries, considering biology as a discipline. Evolution, problems of heredity, development, and cell theory. Cross-listed as HPS 330. Credit is allowed for only BIO 316 or HPS 330. General Studies: H

M BIO 317 Conservation Biology. (3) fall Scientific and technical means for management, maintenance, protection, and restoration of biological resources on this planet. Prerequisite: 8 hours in biology.

M BIO 318 History of Medicine. (3) once a year Scientific study of the human body, changing theories of disease, evolution of practical opinions on treatment, and the emerging institutionalization of medical practice. Cross-listed as HPS 331. Credit is allowed for only BIO 318 or HPS 331. General Studies: H

M BIO 319 Environmental Science (Nonmajor). (3) fall Environmental and biological concepts used to understand ecological systems with specific references to problems caused by humans. Cannot be used for major credit in the biological sciences. Cross-listed as PLB 320. Credit is allowed for only BIO 319 or PLB 320. General Studies: G

M BIO 320 Fundamentals of Ecology. (3) fall and spring Organization, functioning, and development of ecological systems; energy flow; biogeochemical cycling; environmental relations; population dynamics. Prerequisite: BIO 187 or instructor approval.

M BIO 321 Introductory Ecology Laboratory. (3) once a year Laboratory and field observations and experiments to test current concepts and theories in ecology. Lab. Fee. Pre- or corequisite: BIO 320.

M BIO 325 Oceanography. (3) fall Introduces marine geology, chemistry, and physical and biological oceanography. Methods of oceanic exploration, environmental and social aspects of oceans. Cross-listed as GLG 325. Credit is allowed for only BIO 325 or GLG 325. Prerequisite: BIO 101 or GLG 101 or instructor approval.

M BIO 331 Animal Behavior. (3) fall Evolutionary, genetic, physiological, and ecological bases of animal behavior. Prerequisite: BIO 187 (or its equivalent).

M BIO 336 Sociobiology. (3) selected semesters Survey of animal and human social behavior examined from an evolutionary perspective. Suitable for nonmajors. Prerequisite: BIO 331 recommended.

M BIO 340 General Genetics. (4) fall, spring, summer Science of heredity and variation. 3 hours lecture, 1 hour recitation. Prerequisite: BIO 187.

M BIO 341 Genetic Analysis. (5) selected semesters General genetics: science of heredity and variation using critical inquiry. Not open to students with credit for BIO 340. 3 hours lecture, 6 hours lab. Prerequisites: BIO 187 and 193 (or their equivalents).

M BIO 342 General Genetics Laboratory. (2) fall Explores general principles of inheritance with special reference to Mendelian, molecular, and computational genetics via laboratory experiments. Lab. Pre- or corequisite: BIO 340.
M BIO 343 Genetic Engineering and Society. (4) fall
Introduces genetic engineering, with emphasis on applications (gene therapy, DNA fingerprinting, bioremediation, transgenic animals and plants), 3 hours lecture, 3 hours lab. Cross-listed as MBB 343. Credit is allowed for only BIO 343 or MBB 343. Fee. Prerequisites: preferably MBB 245 or BIO 198 (or its equivalent).
General Studies: L
M BIO 344 Origins, Evolution, and Creation. (3) selected semesters
Examines scientific, mythic, and religious ideas relating to origins (particularly human). Place of antievolutionism and “scientific creationism” in American culture. Lecture, discussion. Cross-listed as HPS 311/HUM 371/REL 383. Credit is allowed for only BIO 344 or HPS 311 or HUM 371 or REL 383.
M BIO 345 Organic Evolution. (3) spring
Processes of adaptive change and speciation in sexual populations. Prerequisite: BIO 187.
M BIO 346 The Darwinian Revolution. (3) selected semesters
Intelectual and cultural history of Darwinism and modern evolutionary theory and their impact on 19th- and 20th-century thought. Lecture, discussion. Cross-listed as HPS 332/HUM 372; Credit is allowed for only BIO 346 or HPS 332 or HUM 372.
M BIO 351 Developmental Anatomy. (3) fall
General developmental biology (embryology) and comparative structure of organ systems, illustrated mainly by vertebrate examples. Prerequisite: BIO 187.
M BIO 352 Laboratory in Vertebrate Developmental Anatomy. (2) fall
Morphology of representative embryonic and adult vertebrates, 2 3-hour labs. Fee. Prerequisites: BIO 187; BIO 351 recommended.
M BIO 353 Cell Biology. (3) fall, spring, summer
Survey of major topics in cell biology, including structural, biochemical, and molecular aspects of cell function. Prerequisite: BIO 187.
M BIO 360 Animal Physiology. (3) fall and spring
Physiological mechanisms of the higher vertebrates. Prerequisites: BIO 187; CHM 115; MAT 117.
M BIO 361 Animal Physiology Laboratory. (2) fall and spring
Experimental laboratory studies of physiological mechanisms in animals and model systems. Lab, recitation. Fee. Prerequisites: CHM 115; MAT 117. Pre- or corequisite: BIO 360.
M BIO 370 Vertebrate Zoology. (4) fall and spring
Characteristics, classification, evolution, and natural history of the major groups of vertebrate animals. 3 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 187.
M BIO 385 Comparative Invertebrate Zoology. (4) fall
Characteristics, life cycles, adaptations, and evolution of invertebrate animals. 3 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 187 or instructor approval.
M BIO 386 General Entomology. (4) selected semesters
Form, activities, and classification of insects, 3 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 187.
M BIO 390 Medical/Dental Field Placement. (3) fall, spring, summer
Field placement for students exploring a career in a health profession. Requires classroom sessions and field work, Lecture, lab. Prerequisites: application; instructor approval.
M BIO 394 Special Topics. (1–4) selected semesters
Topics of current or special interest in one or more aspects of biology. Topics may include the following.
• Introduction to Computational Molecular Biology. (2–3) Fee. Prerequisite: junior standing.
M BIO 406 Computer Applications in Biology. (3) fall
Computer analysis techniques in biology emphasizing data entry, management and analysis, and graphic portrayal. Employs mainframe and microcomputers. 2 hours lecture, 3 hours lab. Cross-listed as PLB 432. Credit is allowed for only BIO 406 or PLB 432. Fee. Prerequisites: both BIO 187 and MAT 117 (or 210) or only instructor approval.
General Studies: CS
M BIO 410 Techniques in Wildlife Conservation Biology. (3) fall
Field and analytical techniques used in evaluating population structure, viability and environmental impacts. Lecture, lab. Fee. Prerequisites: both BIO 317 and 320 or only instructor approval.
General Studies: L
M BIO 411 Advanced Conservation Biology I. (3) selected semesters
Principles of conservation science, biology of threatened species, management principles that meet conservation goals, emphasizing North American ecosystems. Prerequisites: BIO 317, 320.
M BIO 412 Advanced Conservation Biology II. (3) spring
Global biodiversity patterns, processes, and conservation; global environmental change; sustainable use of natural resources; emphasizing international approaches to conservation biology. Prerequisites: BIO 317, 320.
M BIO 414 Research Colloquium in Biology and Society I. (1) spring
Further develops critical thinking abilities, research methods, and writing skills for research in the interactions between biological sciences and society. Lecture, discussion. Prerequisites: both BIO 311 and 314 or only instructor approval.
General Studies: L (if credit also earned in BIO 314)
M BIO 415 Biometry. (4) fall
Statistical methods applied to biological problems, design of experiments, estimation, significance, analysis of variance, regression, correlation, chi square, and bioassay; the use of computers. Does not satisfy laboratory requirements for the College of Liberal Arts and Sciences: General Studies program. 3 hours lecture, 3 hours lab. Fee. Prerequisite: MAT 210 (or its equivalent).
General Studies: CS
M BIO 416 Professional Values in Science. (3) once a year
Considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity. Discussion, student projects. Cross-listed as HPS 410. Credit is allowed for only BIO 416 or HPS 410.
General Studies: L
M BIO 417 Experimental Design. (3) spring
Fixed, random, mixed models; crossed and nested factorial designs; balanced and unbalanced data; completely randomized, blocked, repeated measure designs; ANCOVA. Prerequisite: BIO 415 (or its equivalent).
M BIO 420 Field Zoology. (3) selected semesters
Experience in zoological field techniques. Weekend or longer field trips. Prerequisite: instructor approval.
M BIO 421 Landscape Ecology. (3) fall
Discusses how landscape heterogeneity interacts with ecological processes, and implications for biodiversity conservation, resource management, and landscape and urban planning. Prerequisite: BIO 320.


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M BIO 423 Population and Community Ecology. (3)
   selected semesters
   Organization and dynamics of population and communities, emphasizing animals. Theoretical and empirical approaches. Prerequisite: BIO 320 or instructor approval.

M BIO 424 Mathematical Models in Ecology. (4)
   selected semesters
   Mathematical modeling of populations, communities, and ecosystems, including case studies and student-designed projects. 3 hours lecture, 3 hours lab. Prerequisites: BIO 320; a course in calculus.

M BIO 425 Animal Ecology. (3)
   selected semesters
   Physiological and behavioral adaptations of individual animals to both abiotic and biotic environments. Prerequisite: BIO 320.

M BIO 426 Limnology. (4)
   selected semesters
   Structure and function of aquatic ecosystems, with emphasis on freshwater lakes and streams. 3 hours lecture, 3 hours lab or field trip. Fee. Prerequisite: BIO 320 or instructor approval.

M BIO 427 Fire. (3)
   selected semesters
   Interdisciplinary survey of fire on Earth—its history, ecology, and management. Prerequisite: BIO 187.

M BIO 428 Biogeography. (3)
   fall
   Environmental and historical processes determining distributional patterns of animals and plants, emphasizing terrestrial life. Prerequisites: BIO 187 (or its equivalent); junior standing.

M BIO 431 Genes, Development, and Evolution. (3)
   fall
   Contribution of genes, developmental processes, and evolution to pattern of phenotypic variation, including disease. Discussion, presentation. Prerequisites: BIO 187, 188 (or their equivalents).

M BIO 435 Research Techniques in Animal Behavior. (3)
   selected semesters
   Experimental and field studies of animal behavior; description and quantification of animal behavior and interpretation of behavior within an evolutionary framework. 1 hour lecture, 6 hours lab. Prerequisite: BIO 331.

M BIO 446 Principles of Human Genetics. (3)
   once a year
   Molecular and cellular analysis of the human genome. Prerequisite: BIO 340.

M BIO 450 Advanced Developmental Biology. (3)
   spring
   Current concepts and experimental methods involving differentiation and biosynthetic activities of cells and organisms, with examples from microorganisms, plants, and animals. Prerequisite: BIO 351.

M BIO 451 Cell Biotechnology Laboratory. (3)
   fall
   Mammalian cell culture techniques, including mouse embryonic stem cells, the use of bioreactors, cell fractionation, and digital video imaging. Lecture, lab. Cross-listed as BME 451. Credit is allowed for only BIO 451 or BME 451. Prerequisites: BIO 353; instructor approval.

M BIO 453 Animal Histology. (4)
   selected semesters
   Microscopic study of animal tissues. 3 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 187 or instructor approval.

M BIO 460 Astrobiology. (3)
   fall and spring
   Origin, early evolution, distribution, and future of life on Earth and elsewhere in the cosmos. May be repeated for credit. Lecture, discussion, video conferences, possible field trips. Cross-listed as AST 460/CHM 483/GLG 460/MIC 475. Credit is allowed for only AST 460 or BIO 460 or CHM 483 or GLG 460 or MIC 475. Prerequisite: instructor approval.

M BIO 464 Photobiology. (3)
   selected semesters
   Principles underlying the effects of light on growth, development, and behavior of plants, animals, and microorganisms. Cross-listed as PLB 440. Credit is allowed for only BIO 464 or PLB 440. Prerequisites: CHM 231 (or 233); 12 hours in life sciences.

M BIO 465 Neurophysiology. (3)
   spring in even years
   Detailed treatment of cellular and organismal neurophysiology and nervous system function. Prerequisite: BIO 360.

M BIO 466 Neurophysiology Laboratory. (2)
   selected semesters
   Intracellular and extracellular electrophysiological recording techniques, histological preparations, and dye-filling techniques. 6 hours lab. Pre- or corequisite: BIO 465.

M BIO 470 Systematic Zoology. (4)
   spring in odd years
   Philosophy, theory, practice of interpreting animal diversity, including species concepts, speciation, nomenclature, and evolutionary and phylogenetic classification emphasizing phylogenetics. 3 hours lecture, 3 hours lab. Prerequisites: junior standing; 18 hours in life sciences.

M BIO 471 Ornithology. (3)
   spring in odd years
   Biology of birds. 2 hours lecture, 3 hours lab, weekend field trips. Fee. Prerequisite: BIO 370 or instructor approval.

M BIO 472 Mammalogy. (4)
   fall in odd years
   Classification, structure, habits, ecology, and distribution of mammals, emphasizing North American forms. 3 hours lecture, 3 hours lab or field trip, weekend field trips. Fee. Prerequisite: BIO 370 or instructor approval.

M BIO 473 Ichthyology. (3)
   spring in odd years
   Systematics and biology of recent and extinct fishes. 2 hours lecture, 3 hours lab or field trip, weekend field trips. Fee. Prerequisites: both BIO 370 and 425 or only instructor approval.

M BIO 474 Herpetology. (3)
   spring in even years
   Systematics and biology of recent and extinct reptiles and amphibians. 2 hours lecture, 3 hours lab or field trip. Fee. Prerequisite: BIO 370.

M BIO 480 Methods of Teaching Biology. (3)
   spring
   Methods of instruction, experimentation, organization, and presentation of appropriate content in biology. Prerequisite: 20 hours in the biological sciences.

M BIO 482 Advanced Methods of Teaching Biology. (3)
   fall in odd years

M BIO 484 Internship. (3)
   selected semesters

M BIO 490 Surgical Field Placement. (3)
   fall, spring, summer
   Advanced field placement for students exploring a career in a health profession. Requires classroom sessions and field work. May be repeated for credit. Lecture, lab. Prerequisites: application; instructor approval. Pre- or corequisite: BIO 390.

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

M BIO 493 Honors Thesis. (1–6)
   fall, spring, summer
   General Studies: L

M BIO 494 Special Topics. (1–4)
   selected semesters
   Topics may include the following:
   • Advanced Study Practicum. (1–3)

M BIO 495 Undergraduate Thesis. (3)
   fall, spring, summer
   Guided research culminating in the preparation of an undergraduate thesis based on supervised research done in this and previous semesters. Prerequisites: at least 3 hours of BIO 310 (or 499); formal conference with instructor; instructor and department chair approval.
M BIO 498 Pro-Seminar. (1–7) selected semesters
M BIO 499 Individualized Instruction. (1–3) fall and spring
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
Graduate-Level Courses. For information about courses numbered from 500 to 799, see the Graduate Catalog, or access www.asu.edu/catalog on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

CLINICAL LABORATORY SCIENCES/ MEDICAL TECHNOLOGY (CLS)
M CLS 100 Introduction to Clinical Laboratory Sciences. (1) fall Introduces the field of clinical laboratory sciences. Required for Clinical Laboratory Sciences majors.
M CLS 310 Principles of Clinical Chemistry I. (6) spring Theory and application of principles of clinical chemistry, with emphasis on laboratory techniques, pathophysiology, methods of analysis, and assessment of procedure. 3 hours lecture, 9 hours lab. Fee. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 320 Principles of Clinical Microbiology I. (6) spring Theory and application of principles of clinical microbiology with emphasis on isolation and identification of medically significant fungi and bacteria. 3 hours lecture, 9 hours lab. Fee. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 330 Principles of Clinical Hematology I/Body Fluids. (3) fall Theory and application of principles in hematology, with emphasis on techniques to evaluate blood dyscrasias and analyze body fluids. 2 hours lecture, 3 hours lab. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 410 Principles of Clinical Chemistry II. (2) summer Continuation of CLS 310 with emphasis on principles of advanced clinical chemistry. 1 hour lecture, 3 hours lab. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 411 Advanced Applications of Clinical Chemistry. (4) fall Clinical application of theory/techniques from CLS 310 and 410. Emphasizes operation of common laboratory instrumentation and clinical correlation. Minimum 180 hours practicum. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 420 Principles of Clinical Microbiology II. (2) summer Disease mechanisms and identification of medically significant parasites, Mycobacteria, Actinomycetes, Chlamydia, Rickettsia, Mycoplasma, and viruses. 1 hour lecture, 3 hours lab. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 421 Advanced Applications of Clinical Microbiology. (4) spring Practical laboratory application of the principles of specimen collection, processing, detection, identification, and antimicrobial testing of medically significant bacteria, fungi, and parasites. Minimum 180 hours practicum. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 430 Principles of Clinical Hematology II/Hemostasis. (3) fall Theory and applications of principles in hematology with emphasis on etiology, pathophysiology, clinical manifestations, and treatment of blood dyscrasias/hemostatic defects. 2 hours lecture, 3 hours lab. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 431 Advanced Applications of Clinical Hematology. (4) spring Practical laboratory application of methods/techniques used to evaluate and diagnose blood dyscrasias/hemostatic defects. Applied techniques in body fluid analysis. Minimum 180 hours practicum. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 440 Principles of Clinical Immunology/Immunohematology. (4) fall Theoretical and practical application of clinical immunology and immunohematology. Emphasizes serological techniques that aid disease diagnosis and blood donor selection. 3 hours lecture, 3 hours lab. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 441 Advanced Applications of Clinical Immunology/Immunohematology. (3) spring Practical laboratory application of the principles of serological methods used in diagnosing disease and selecting blood components for transfusion therapy. Minimum 135 hours practicum. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
M CLS 450 Principles of Clinical Laboratory Administration. (2) fall and spring Principles of management, with emphasis on the clinical laboratory. Basic management process, personnel supervision, identification, and allocation of resources. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
General Studies: L (if credit also earned in CLS 460)
M CLS 460 Principles of Clinical Laboratory Education. (1) spring Principles of learning, with application to the development of instructional objectives, strategies, and evaluation for teaching-learning situations in the laboratory. Prerequisite: admission to the Clinical Laboratory Sciences professional study program.
General Studies: L (if credit also earned in CLS 450)
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

HISTORY AND PHILOSOPHY OF SCIENCE (HPS)
M HPS 311 Origins, Evolution, and Creation. (3) selected semesters Examines scientific, mythic, and religious ideas relating to origins (particularly human). Place of anti-evolutionism and “scientific creationism” in American culture. Lecture, discussion. Cross-listed as BIO 344/HUM 371/REL 383. Credit is allowed for only BIO 344 or HUM 311 or HUM 371 or REL 383.
M HPS 314 Philosophy of Science. (3) once a year Structure and justification of scientific theories, explanation, and theory change. Roles of observation and laws, theoretical concepts and entities, reduction, probability, confirmation, space and time, and causation. Cross-listed as PHI 314. Credit is allowed for only HPS 314 or PHI 314.
General Studies: HU
M HPS 322 History of Science. (3) once a year Development and application of scientific thinking from ancient times through the 17th century. General Studies: HU, H
M HPS 323 History of Science. (3) selected semesters Development and application of scientific thinking from the 18th century to the present. General Studies: HU, H
M HPS 325 Chinese Science and Medicine. (3) selected semesters
Explores development of Chinese traditions dealing with the natural world, science, and medicine. Lecture, discussion. Cross-listed as HST 385. Credit is allowed for only HPS 325 or HST 385.
General Studies: HU, G, H

M HPS 330 History of Biology: Conflicts and Controversies. (3) selected semesters
Focuses on 19th and 20th centuries, considering biology as a discipline. Evolution, problems of heredity, development, and cell theory. Cross-listed as BIO 316. Credit is allowed for only BIO 316 or HPS 330.
General Studies: H

M HPS 331 History of Medicine. (3) once a year
Scientific study of the human body, changing theories of disease, evolution of practical opinions on treatment, and the emerging institutionalization of medical practice. Cross-listed as BIO 318. Credit is allowed for only BIO 318 or HPS 331.
General Studies: H

M HPS 332 The Darwinian Revolution. (3) selected semesters
Intellectual and cultural history of Darwinism and modern evolutionary theory and their impact on 19th- and 20th-century thought. Lecture, discussion. Cross-listed as BIO 346/HUM 372. Credit is allowed for only BIO 346 or HPS 332 or HUM 372.

M HPS 336 Exploration and Science. (3) fall
500-year survey of exploration as a historical process and cultural activity of Western civilization, with emphasis on its links with modern science.
General Studies: SB, H

M HPS 340 Biology and Society. (3) fall
Explores interactions between biological sciences and society, e.g., biomedical, environmental, ethical, historical, legal, philosophical, political, and social issues. Lecture, discussion. Cross-listed as BIO 311. Credit is allowed for only BIO 311 or HPS 340. Prerequisites: both BIO 187 and 188 or only BIO 193 (or 100).

M HPS 377 Nature in Context. (3) fall
Explores perspectives on the nature of nature, the history of ecology, and the rise of environmentalism. Seminar. Cross-listed as HON 377. Credit is allowed for only HON 377 or HPS 377.
General Studies: L/HU

M HPS 402 Technology, Society, and Human Values. (3) once a year
Values that motivate humankind to create technology. Areas of conflict and resolution of conflict between values and technology. Readings and discussions with visiting lecturers. Prerequisite: junior standing.

M HPS 410 Professional Values in Science. (3) once a year
Considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity. Discussion, student projects. Cross-listed as BIO 416. Credit is allowed for only BIO 416 or HPS 410.
General Studies: L

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

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

MOLECULAR BIOSCIENCES/BIOTECHNOLOGY (MBB)

M MBB 245 Cellular and Molecular Biology. (4) fall and spring
Concepts that underlie relationships between cellular and subcellular structure and function, and integration of major metabolic and genetic processes. Lecture, lab. Fee. Prerequisite: life science major or preprofessional student in health-related sciences.
General Studies: SQ

M MBB 247 Applied Biosciences: Biotechnology. (4) fall and spring
Applies concepts of molecular and cellular biology of bacteria, animals, and plants to real-world problems. Lecture, lab. Fee. Prerequisite: MBB 245.

M MBB 343 Genetic Engineering and Society. (4) fall
Introduces genetic engineering, with emphasis on applications (gene therapy, DNA fingerprinting, bioremediation, transgenic animals and plants), 3 hours lecture, 3 hours lab. Cross-listed as BIO 343. Credit is allowed for only BIO 343 or MBB 343. Fee. Prerequisites: preferably MBB 247 or BIO 188 (or its equivalent).
General Studies: L

M MBB 350 Applied Genetics. (4) spring
Introduces molecular genetics with emphasis on application of genetics in solving biological questions and engineering organisms in biotechnology. 2 hours lecture, 6 hours lab. Cross-listed as PLB 350. Credit is allowed for only MBB 350 or PLB 350. Fee. Prerequisite: preferably MBB 247 or BIO 340 (or 341).

M MBB 445 Techniques in Molecular Biology/Genetics. (2) fall and spring
Molecular genetic principles: plasmid construction, purification, and characterization; PCR, mutageneses; hybridization and sequence analysis; protein quantitation, immunologic detection, and electrophoresis. Cross-listed as MIC 445. Credit is allowed for only MBB 445 or MIC 445. Prerequisites: both BIO 340 and MIC 302 or only instructor approval.

M MBB 446 Techniques in Molecular Biology/Genetics Lab. (2) fall and spring
Molecular genetic techniques: plasmid construction, purification, and characterization; PCR, mutageneses; hybridization and sequence analysis; protein quantitation; immunologic detection and electrophoresis. Cross-listed as MIC 446. Credit is allowed for only MBB 446 or MIC 446. Pre- or corequisite: MBB 445 or MIC 445.

M MBB 484 Internship. (3) selected semesters

M MBB 490 Capstone: Issues in Biotechnology. (2) once a year
Integrates science and humanities within problem-solving exercises dealing with intellectual property, ethics, regulatory issues, business practices, and commercialization. May be repeated for credit. Prerequisite: Molecular Biosciences/Biotechnology major or instructor approval.
General Studies: L (must be taken twice to secure L credit)

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

M MBB 493 Honors Thesis. (1–6) selected semesters
General Studies: L

M MBB 494 Special Topics. (1–4) selected semesters

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

M MBB 499 Individualized Instruction. (3) selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

MOLECULAR AND CELLULAR BIOLOGY (MCB)

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

MICROBIOLOGY (MIC)

M MIC 205 Microbiology. (3) fall, spring, summer
Basic course for students without credit in BIO 188, emphasizing general principles; role of microorganisms in health, ecology, and applied fields. May not be used for Microbiology major credit unless a
M MIC 206 Microbiology Laboratory. (1) fall, spring, summer
Principles and laboratory techniques used in identifying and handling microorganisms. 3 hours lab. Fee. Pre- or corequisite: MIC 205 or 220. General Studies: SG (if credit also earned in MIC 205)

M MIC 220 Biology of Microorganisms. (3) fall and spring
Basic course for students with credit in BIO 188. Detailed study of microbial cells, their structure, genetics, physiology, and taxonomy. Corequisites: BIO 187; CHM 115.

M MIC 302 Advanced Bacteriology Laboratory. (2) fall and spring
Advanced laboratory techniques in bacterial growth, physiology, genetics, and microscopy. Required of Microbiology majors. 4 hours lab. Fee. Prerequisites: completion of General Studies L requirement and either (a) MIC 206 and 220 or (b) MIC 205 and 206 and instructor approval.

M MIC 360 Bacterial Physiology. (3) fall and spring
Mechanisms and control of cell metabolism, structures, and functions. Prerequisite: MIC 220, Pre- or corequisite: BCH 361 or instructor approval.

M MIC 380 Medical Parasitology. (3) fall
Parasitic diseases of humans, including life cycle events and clinical manifestations. Prerequisite: MIC 205 or 220.

M MIC 381 Pathogenic Microbes. (3) spring
Host-microbial interactions in infectious disease, with emphasis on pathogenesis, host defenses, and molecular mechanisms of microbial virulence. Prerequisite: MIC 360 or 6 hours in microbiology with instructor approval.

M MIC 394 Special Topics. (1–4) selected semesters
Topics may include the following:
- HIV Disease and AIDS in America
- Medical Immunology

M MIC 401 Research Paper. (1) fall, spring, summer
Paper of 15 or more pages based on library or laboratory research in collaboration with a faculty member. Required of all Microbiology majors. Prerequisites: MIC 302; completion of General Studies L requirement.

M MIC 402 Service Learning. (3) fall and spring
K–12 tutoring internship; learning activities employed were originally developed as part of the Bio Reach Program. Requires weekly reflective writing. May be repeated for credit. Internship. Fee. Pre- or corequisite: BIO 181 or 188. General Studies: C

M MIC 420 Immunology: Molecular and Cellular Foundations. (3) fall
Molecular and cellular foundations of immunology. Antibody/antigen interactions, cellular response, cytokines, immunogenetics, immunoregulation, autoimmunity, psychoneuroimmunology research/medical perspectives. Prerequisites: both CHM 231 (or 233) and MIC 205 (or 220) or only instructor approval.

M MIC 421 Experimental Immunology. (2) fall and spring
Introduces the basic techniques, methods, and assays used in immunology. 6 hours lab. Fee. Prerequisites: a combination of CHM 231 and 233 and MIC 302 or only instructor approval.

M MIC 425 Advanced Immunology. (3) selected semesters
Survey of recent advances in immunology, including lymphocyte membranes, lymphokines/biochemistry, molecular genetics, theoretical immunology, immunoregulation, neuroimmunology, and immunologic diseases. Prerequisite: MIC 420 or instructor approval.

M MIC 428 Immunophilosophy. (3) selected semesters
Integrates immunology and philosophy, including psychoneuroimmunology and the mind-body problem, and immunologic/psychologic perspectives on self and self-identity. Discussion, original literature readings and written assignments. Cross-listed as PHI 428. Credit is allowed for only MIC 428 or PHI 428. Pre- or corequisite: MIC 420 or PHI 317 or instructor approval.

M MIC 441 Bacterial Genetics. (3) spring
Survey of genetic exchange and regulatory processes in bacteria and their viruses. Bacteria and viruses as tools in genetic engineering. Prerequisites: both BIO 340 and MIC 205 (or 220) or only instructor approval.

M MIC 442 Bacterial Genetics Laboratory. (1) fall
Techniques of mutagenesis, mapping, and strain and genetic library construction. 4 hours lab. Prerequisites: MIC 206, 302. Pre- or corequisite: MIC 441.

M MIC 445 Techniques in Molecular Biology/Genetics. (2) fall and spring
Molecular genetic principles: plasmid construction, purification, and characterization; PCR; mutageneses; hybridization and sequence analysis; protein quantitation; immunologic detection and electrophoresis. Cross-listed as MBB 445. Credit is allowed for only MBB 445 or MIC 445. Prerequisites: both BIO 340 and MIC 302 or only instructor approval.

M MIC 446 Techniques in Molecular Biology/Genetics Lab. (2) fall and spring
Molecular genetic techniques: plasmid construction, purification, and characterization; PCR; mutageneses; hybridization and sequence analysis; protein quantitation; immunologic detection and electrophoresis. Cross-listed as MBB 446. Credit is allowed for only MBB 446 or MIC 446. Pre- or corequisite: MBB 445 or MIC 445.

M MIC 461 Geomicrobiology. (3) spring
Past and present interactions among microbial life, geological materials, and biogeochemical cycles involving carbon, sulfur, phosphate, nitrogen, and metals. Cross-listed as GLG 461. Credit is allowed for only GLG 461 or MIC 461. Prerequisites: introductory courses in chemistry and microbiology (or geological sciences); instructor approval.

M MIC 470 Bacterial Diversity and Systematics. (4) selected semesters
Biological classification, and enrichment culture of the nonpathogenic bacteria. 2 hours lecture, 6 hours lab. Fee. Prerequisite: MIC 302.

M MIC 475 Astrobiology. (3) fall and spring
Origin, early evolution, distribution, and future of life on Earth and elsewhere in the cosmos. May be repeated for credit. Lecture, discussion, video conferences, possible field trips. Cross-listed as AST 460/BIO 460/CHM 483/GLG 460. Credit is allowed for only AST 460 or BIO 460 or CHM 483 or GLG 460 or MIC 475. Prerequisite: instructor approval.

M MIC 484 Internship. (1–12) fall, spring, summer

M MIC 485 General Virology. (3) fall
Fundamental principles of viruses, their molecular biology, replication, genetics, and pathogenesis. Prerequisites: a combination of BCH 361 and MIC 206 and 220 or only instructor approval.

M MIC 492 Honors Directed Study. (1–6) selected semesters
460 or BIO 460 or CHM 483 or GLG 460 or MIC 475. Prerequisite: AST 460/BIO 460/CHM 483/GLG 460. Credit is allowed for only AST 460 or BIO 460 or CHM 483 or GLG 460 or MIC 475. Prerequisite: instructor approval.
M MIC 493 Honors Thesis. (1–6)
selected semesters
General Studies: L

M MIC 494 Special Topics. (1–4)
selected semesters
Topics may include the following:
• Clinical Bacteriology Laboratory. (3)
• Service Learning (Bioreach). (3)

M MIC 495 Undergraduate Research. (1–6)
tail, spring, summer
Supervised research in microbiology. May be repeated for credit. Lab. Prerequisites: MIC 206, 220, 302; instructor approval.

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

M MIC 499 Individualized Instruction. (1–3)
selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

PLANT BIOLOGY (PLB)
M PLB 108 Concepts in Plant Biology. (4)
tail, spring, summer
Introduces concepts of plant biology that are of human relevance using commercially important, edible, and medicinal plants as examples. Not for majors in the biological sciences. 3 hours lecture, 3 hours lab. Fee. General Studies: SQ

M PLB 200 Biology of Plants. (3)
tail, spring, summer
Analyzes the structure/function interaction for plant cells and tissues and properties that emerge in whole plants. Prerequisites: high school biology and chemistry. General Studies: SQ (if credit also earned in PLB 210)

M PLB 201 Biology of Plants Laboratory. (1)
tail, spring, summer
Lab/field experiments to teach techniques and protocols of the scientific process; reinforces concepts from lecture by asking questions and solving problems. Lab. Prerequisites: high school biology and chemistry. General Studies: SQ (if credit also earned in PLB 200)

M PLB 300 Comparative Plant Diversity. (4)
tail
Surveys major plant groups and other photosynthetic organisms. Emphasizes comparative data analysis, evolutionary inference, and phylogenetic methods. 3 hours lecture, 3 hours lab. Fee. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent). General Studies: L/SQ

M PLB 302 Plants and Civilization. (3)
tail
Plants and plant products used by people throughout the world. Ecology, economics, and evolutionary diversity of the algae and fungi. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent).

M PLB 304 Biology of Algae and Fungi. (3)
selected semesters
Ecology, economics, and evolutionary diversity of the algae and fungi. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent); CHM 101 (or 115 or 231).

M PLB 305 Desert Annuals and Cacti. (3)
tail
Adaptive biology of select plants. Analyzes diverse traits permitting survival in deserts: reproduction, structure, and physiology. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent).

M PLB 306 Plant Anatomy. (4)
tail
Development and mature structure of tissues of vascular plants; patterns and modifications of the leaf, stem, root, and flower. 3 hours lecture, 3 hours lab. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent).

M PLB 308 Plant Physiology. (4)
spring
Concepts of plant function: carbon metabolism, energy acquisition, regulation of growth and development, stress responses, and water and nutrient uptake. Fee. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent); CHM 101 (or 115 or 231).

M PLB 310 The Flora of Arizona. (4)
spring
Principles of taxonomy; identification of Arizona plants. 2 hours lecture, 6 hours lab. Fee. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent).

M PLB 400 Lichenology. (3)
spring in odd years
Chemistry, ecology, physiology, and taxonomy of lichens. 2 hours lecture, 3 hours lab. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent).

M PLB 401 Mycology. (3)
spring
Fungal morphology and systematics with an introduction to fungal cell biology, ecology, economic significance, and growth and development. 2 hours lecture, 3 hours lab. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent) or only MIC 206.

M PLB 402 Service Learning. (3)
tail and spring
K–12 tutoring and mentoring internship related to academic course work in plant biology; requires weekly reflective reading and writing. May be repeated for credit. Internship. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). General Studies: C

M PLB 403 Service Learning. (1–6)
tail
K–12 tutoring and mentoring internship related to academic course work in plant biology; requires weekly reflective reading and writing. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). May be repeated for credit. Internship. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). General Studies: C

M PLB 404 Phycology. (4)
spring
Algae (both fresh water and marine forms), emphasizing field collection and identification of local representatives. Morphological, ecological, and economic aspects of the algae. 3 hours lecture, 3 hours lab. Fee. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent).

M PLB 405 Service Learning. (1–6)
tail
K–12 tutoring and mentoring internship related to academic course work in plant biology; requires weekly reflective reading and writing. Internship. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). May be repeated for credit. Internship. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). General Studies: C

PLANT BIOLOGY (PLB)
M PLB 407 Plant Fossils and Evolution. (4)
spring in odd years
Broad survey of plant life of the past, including the structure of plant fossils, their geologic ranges, geographic distribution, and paleoenvironment. 3 hours lecture, 3 hours lab or field trip. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent).

M PLB 410 Angiosperm Taxonomy. (3)
spring
Principles underlying angiosperm phylogeny. 2 hours lecture, 3 hours lab. Prerequisite: PLB 310 or instructor approval.

M PLB 411 Trees and Shrubs of Arizona. (3)
tail
Identification of woody plants from desert, chaparral, and forest habitats in Arizona. 1 hour lecture, 3 hours lab, field trips. Fee. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent) or only instructor approval.

M PLB 414 Plant Pathology. (3)
spring
Identification and control of biotic and abiotic factors that cause common disease problems to plants. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent) or only instructor approval. General Studies: L

M PLB 416 Medical Botany. (4)
summer
Explores plants affecting human health: modern- and folk-usage medicinal plants. Quality control, clinical evidence, plant chemistry, and ethnopharmacology. 3 hours lecture, 3 hours lab. Prerequisites: preferably both PLB 200 and 201 or only BIO 187 (or its equivalent) or only instructor approval.

M PLB 484 Internship. (1–12)
selected semesters
Topics may include the following:
• Plant Biology Internship. (3)
• EnvironBot Internship. (3)
• Service Learning (Bioreach). (3)
• K–12 tutoring and mentoring internship related to academic course work in plant biology; requires weekly reflective reading and writing. Internship. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). May be repeated for credit. Internship. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). General Studies: C

M PLB 488 Internship. (1–12)
selected semesters
Topics may include the following:
• Plant Biology Internship. (3)
• EnvironBot Internship. (3)
• Service Learning (Bioreach). (3)
• K–12 tutoring and mentoring internship related to academic course work in plant biology; requires weekly reflective reading and writing. Internship. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). May be repeated for credit. Internship. Fee. Pre- or corequisite: BIO 187 or PLB 108 (or 200 and 201). General Studies: C
• Service Learning  
  fall, spring, summer  
  Fee.  
  M PLB 492 Honors Directed Study. (1–6)  
  selected semesters  
  M PLB 493 Honors Thesis. (1–6)  
  selected semesters  
  General Studies: L  
  M PLB 494 Special Topics. (1–4)  
  selected semesters  
  M PLB 498 Pro-Seminar. (1–7)  
  fall and spring  
  M PLB 499 Individualized Instruction. (3)  
  selected semesters  

Environmental Science and Ecology  
M PLB 320 Environmental Science (Nonmajor). (3)  
fall  
Environmental and biological concepts used to understand ecological systems with specific references to problems caused by humans. Cannot be used for major credit in the biological sciences. Cross-listed as BIO 319. Credit is allowed for only BIO 319 or PLB 320. 
General Studies: G  
M PLB 322 Environmental Science (Major). (3)  
fall  
Nature of environmental and biological interaction: historical and modern examples, regional and global issues. Participation in environmental problem-solving activities. Lecture, lab. Prerequisites: preferably both PLB 200 and 201 or both GLG 110 and 111 or only GPH 111.  
M PLB 420 Plant Ecology: Organisms and Populations. (3)  
spring in odd years  
Factors and controls on the physiological ecology and organization of plants and plant populations using empirical and theoretical approaches. 2 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 320 or PLB 322 (or its equivalent).  
M PLB 421 Plant Ecology: Communities and Ecosystems. (3)  
spring in even years  
Plant community organization, field sampling techniques, and the structure and function of terrestrial ecosystems emphasizing the role of vegetation. 2 hours lecture, 3 hours lab. Fee. Prerequisite: BIO 320 or PLB 322 (or its equivalent).  
M PLB 422 Plant Geography. (3)  
once a year  
Plant communities of the world and their interpretation, emphasizing North American plant associations. Cross-listed as GPH 422. Credit is allowed for only GPH 422 or PLB 422. Prerequisites: preferably both PLB 200 and 201 or only GPH 111.  
M PLB 430 Statistical Analyses in Environmental Science. (3)  
spring  
ANOVAS, 1-way classification of factorial and partially hierarchic designs; introductory multivariate statistics. Fee. Prerequisite: MAT 210 (or its equivalent).  
General Studies: CS  
M PLB 432 Computer Applications in Biology. (3)  
tall  
Computer analysis techniques in biology emphasizing data entry, management and analysis, and graphic portrayal. Employs mainframe and microcomputers. 2 hours lecture, 3 hours lab. Cross-listed as BIO 406. Credit is allowed for only BIO 406 or PLB 432. Fee. Prerequisites: both BIO 187 and MAT 117 (or 210) or only instructor approval.  
General Studies: CS  
M PLB 434 Landscape Ecological Analysis and Modeling. (3)  
spring in odd years  
Technical methods of landscape ecological analyses. Includes mathematical and statistical examination and modeling of landscape ecological patterns and processes. Prerequisites: both BIO 320 and 406 or only PLB 432 (or its equivalent).
The Department of Mathematics and Statistics offers the BA and BS degrees in Mathematics. Students who plan to attend graduate school in mathematics or statistics should choose the BS degree. The department also offers the BS degree in Computational Mathematical Sciences.

The Department of Mathematics and Statistics offers a minor in Mathematics and an academic specialization in mathematics for students pursuing the BAE degree in Secondary Education.

MATHEMATICS—BA

The BA degree in Mathematics requires a minimum of 36 semester hours of course work in mathematics and statistics, and additional course work in closely related fields, for a total of 51 semester hours. A grade of “C” (2.00) or higher is required in all courses taken for the major. MAT 370 and 371 may not both be used to satisfy these degree requirements. The required course work has the following components:

Core Courses
MAT 270 Calculus with Analytic Geometry I MA .................................4
MAT 271 Calculus with Analytic Geometry II MA ............................4
MAT 272 Calculus with Analytic Geometry III MA ..........................4
MAT 300 Mathematical Structures I .....................................................4
or MAT 243 Discrete Mathematical Structures (3)

MAT 342 Linear Algebra .................................................................3
or MAT 343 Applied Linear Algebra (3)
and MAT 294 ST: Sophomore Problem Seminar (3)

MAT 370 Intermediate Calculus .......................................................3
MAT 371 Advanced Calculus I (3)

Total ...............................................................................................21

Computer Science Requirement
CSE 100 Principles of Programming with C++ CS ............................3
or CSE 110 Principles of Programming Java CS (3)

Total ...............................................................................................3

Additional Course Work in Mathematics and Statistics
Five additional courses in mathematics and statistics are also required.................................15

Related Field Course Work
Course work in mathematics, statistics, or related fields ....................12

1 Acceptable mathematics courses are MAT 243, 274, and upper-
derivation MAT courses, with the exception of MAT 162, 485, and
MAT 411. Acceptable statistics courses are upper-division STP
courses.

2 For a list of related field course work, see an advisor in PSA 211,
or access math.la.asu.edu/undergrad/degree/related-fields.html.

MATHEMATICS—BS

The Department of Mathematics and Statistics has three avenues for earning a BS degree. The BS requirements are similar to the BA requirements, but they require more extensive courses in advanced mathematics. The program is flexible enough to allow students to focus their studies on mathematics or applied mathematics, or statistics. The statistics concentration offers extensive preparation in applied and theoretical statistics. The requirements for the BS degree with the statistics concentration are a subset of those for the BS degree. The requirements for the BS degree and for the BS degree with the computational mathematical sciences concentration are distinct; neither is a subset of the other.

BS Requirements. The BS degree in Mathematics requires a minimum of 42 semester hours of course work in mathematics and statistics, and additional course work in closely related fields, for a total of 55 semester hours. A grade of “C” (2.00) or higher is required in all courses taken for the major. MAT 370 and 371 may not both be used to satisfy these degree requirements. Credit may not be earned for both MAT 274 and 275 or for both MAT 342 and 343. The required course work has the following components:

Core Courses
MAT 270 Calculus with Analytic Geometry I MA .................................4
MAT 271 Calculus with Analytic Geometry II MA ............................4
MAT 272 Calculus with Analytic Geometry III MA ..........................4
MAT 300 Mathematical Structures I .....................................................4
or MAT 243 Discrete Mathematical Structures (3)

MAT 342 Linear Algebra .................................................................3
or MAT 343 Applied Linear Algebra (3)
and MAT 294 ST: Sophomore Problem Seminar (3)

MAT 370 Intermediate Calculus .......................................................3
or MAT 371 Advanced Calculus I (3)

Total ...............................................................................................21

Department of Mathematics and Statistics
math.la.asu.edu
480/965-3951
PS A216

Dieter Armbruster, Interim Chair

Regents’ Professor: Castillo-Chavez

Professors: Armbruster, Barcelo, Bremner, Carlson, Eubank, Gardner, Ihrig, Z. Jackiewicz, Kadell, Kawski, Kierstead, Kostelich, Kuang, Kuiper, Lohr, Lopez, Mahalov, Mittelmann, Nicolaenko, Quigg, Renaud, Ringhofer, Smith, Suslov, Thieme, Thompson, Young

Associate Professors: Baer, Blount, Childress, Farmer, Gelb, Hurlbert, D. Jones, J. Jones, Kaliszewski, Moore, Nikitin, Prewitt, Spielberg, Taylor, Welfert

Assistant Professors: Chen, Crook, Czygrinow, Majumdar, Oehrtman, Roh, Roudenko, Zandieh

Research Professor: Greenwood

Senior Lecturers: Abramson, Isom, Kolossa, Miller, Odish, Rody, Ruedemann, Surgent, Trapuzzano, Vaz, Zhu


The Department of Mathematics and Statistics offers the BA and BS degrees in Mathematics. Students who plan to attend graduate school in mathematics or statistics should choose the BS degree. The department also offers the BS degree in Computational Mathematical Sciences.

The department also offers a minor in Mathematics and an academic specialization in mathematics for students pursuing the BAE degree in Secondary Education.

MATHEMATICS—BS

The BA degree in Mathematics requires a minimum of 36 semester hours of course work in mathematics and statistics, and additional course work in closely related fields, for a total of 51 semester hours. A grade of “C” (2.00) or higher is required in all courses taken for the major. MAT 370 and 371 may not both be used to satisfy these degree requirements. The required course work has the following components:

Core Courses
MAT 270 Calculus with Analytic Geometry I MA .................................4
MAT 271 Calculus with Analytic Geometry II MA ............................4
MAT 272 Calculus with Analytic Geometry III MA ..........................4
MAT 300 Mathematical Structures I .....................................................4
or MAT 243 Discrete Mathematical Structures (3)

MAT 342 Linear Algebra .................................................................3
or MAT 343 Applied Linear Algebra (3)
and MAT 294 ST: Sophomore Problem Seminar (3)

MAT 370 Intermediate Calculus .......................................................3
or MAT 371 Advanced Calculus I (3)

Total ...............................................................................................21

Computer Science Requirement
CSE 100 Principles of Programming with C++ CS ............................3
or CSE 110 Principles of Programming Java CS (3)

Total ...............................................................................................3

Additional Course Work in Mathematics and Statistics
Five additional courses in mathematics and statistics are also required.................................15

Related Field Course Work
Course work in mathematics, statistics, or related fields ....................12

1 Acceptable mathematics courses are MAT 243, 274, and upper-
derivation MAT courses, with the exception of MAT 162, 485, and
MAT 411. Acceptable statistics courses are upper-division STP
courses.

2 For a list of related field course work, see an advisor in PSA 211,
or access math.la.asu.edu/undergrad/degree/related-fields.html.
Related Fields Course Work

Course work in mathematics, statistics, or related fields............10

1. Students who contemplate graduate work in mathematics should choose additional courses listed under the depth requirement to satisfy the advanced courses requirement.

2. Acceptable mathematics courses are MAT 243, 274, and upper division MAT courses, with the exception of MAT 310, 362, 485, and MAT 411. Acceptable statistics courses are 400-level STP courses.

3. For a list of related field course work, see an advisor in PSA 211, or access math.la.asu.edu/undergrid/degree/related-fields.html.

COMPUTATIONAL MATHEMATICAL SCIENCES—BS

The BS degree in Computational Mathematical Sciences curriculum strives to provide students with a background in computer science and the natural or physical sciences in addition to a core of course work in mathematics. The requirements for the BS degree in Computational Mathematical Sciences and for the BS degree in Mathematics are distinct; neither is a subset of the other. A minimum grade of “C” (2.00) is required in all courses taken for the major.

The BS degree in Computational Mathematical Sciences requires a minimum of 32 semester hours of course work in mathematics and statistics, a minimum of 12 to 14 semester hours in science, nine hours in computer science, and a three hour advanced science course or internship/research credit. This adds up to a minimum of 56 to 58 semester hours of study related to the major.

Core Courses

MAT 243 Discrete Mathematical Structures.........................3
or MAT 300 Mathematical Structures L (3)
MAT 271 Calculus with Analytic Geometry II MA ...............4
MAT 272 Calculus with Analytic Geometry III MA .............4
Total .........................................................................................11

Core Courses in Computational Mathematics

MAT 275 Modern Differential Equations MA*.......................3
or MAT 274 Elementary Differential Equations MA (3)
MAT 343 Applied Linear Algebra*.................................4
or MAT 342 Linear Algebra (3)
MAT 420 Scientific Computing ............................................3
MAT 421 Applied Computational Methods CS ....................3
Total .........................................................................................12

* MAT 275 and 343 are recommended.

Advanced Courses in Mathematics and Statistics

Choose one course from group one and two from group two....9

Group One

MAT 370 Intermediate Calculus (3)
MAT 371 Advanced Calculus I (3)
MAT 460 Vector Calculus (3)

Group Two

MAT 351 Mathematical Methods for Genetic Analysis CS (3)
MAT 415 Introduction to Combinatorics (3)
MAT 416 Introduction to Graph Theory (3)
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**Restrictions:** MAT 370 and 371 may both be counted toward major requirements in Computational Mathematical Sciences. Credit may not be earned for both MAT 274 and 275, or for both MAT 342 and 343.

**Statistics Concentration Requirements.** The BS degree in Mathematics with the concentration in statistics requires a minimum of 42 semester hours of course work in mathematics and statistics, plus a minimum of 13 semester hours in computer science and related fields, for a minimum of 55 semester hours of course work related to the major. A grade of "C" (2.00) or higher is required in all courses taken for the major. MAT 370 and 371 may not both be used to satisfy
these requirements. The course work has the following components:

**Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MAT 270 Calculus with Analytic Geometry I MA</td>
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<td>MAT 271 Calculus with Analytic Geometry II MA</td>
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<tr>
<td>MAT 272 Calculus with Analytic Geometry III MA</td>
<td>4</td>
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<tr>
<td>MAT 300 Mathematical Structures L</td>
<td>3</td>
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<tr>
<td>MAT 342 Linear Algebra</td>
<td>3</td>
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<tr>
<td>MAT 371 Advanced Calculus I</td>
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<tr>
<td>STP 420 Introductory Applied Statistics CS</td>
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<tr>
<td>STP 421 Probability</td>
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<tr>
<td>STP 427 Mathematical Statistics</td>
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<tr>
<td>STP 429 Experimental Statistics CS</td>
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**Additional Advanced Courses in Mathematics and Statistics**

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<th>Course</th>
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<tbody>
<tr>
<td>MAT 274 Elementary Differential Equations MA</td>
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<tr>
<td>or MAT 275 Modern Differential Equations MA</td>
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<tr>
<td>MAT 372 Advanced Calculus II</td>
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<td>MAT 423 Numerical Analysis I CS</td>
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<tr>
<td>MAT 442 Advanced Linear Algebra</td>
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<td>STP 425 Stochastic Processes</td>
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**Computer Science Requirement**

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<td>CSE 205 Concepts of Computer Science CS</td>
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**Required Related Field Course Work**

Statistics/probability, mathematics, or related fields* | 10 |

* For a list of related field course work, see an advisor in PSA 211, or access math.la.asu.edu/undergd/degree/related-fields.html.

**Actuarial Science.** The faculty in the Department of Mathematics and Statistics offer courses that cover the content of the mathematical examinations of the Society of Actuaries. See the department’s actuarial advisor for more information.

**Cryptographic Science.** The faculty in the Department of Mathematics and Statistics offer courses that prepare students for graduate studies and careers in cryptography. See the department’s advisors for more information.

**MINORS IN MATHEMATICS AND STATISTICS**

The minor in Mathematics consists of a minimum of 20 semester hours. Required courses are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MAT 271 Calculus with Analytic Geometry II MA</td>
<td>4</td>
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<tr>
<td>MAT 272 Calculus with Analytic Geometry III MA</td>
<td>4</td>
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<tr>
<td>MAT 342 Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>or MAT 343 Applied Linear Algebra</td>
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</table>

Electives must be upper-division courses in mathematics (MAT) or Statistics and Probability (STP). Students may not apply MAT 485 or a course not offered at the Tempe campus to the minor, unless otherwise approved by a department advisor.

The minor in Statistics consists of a minimum of 20 semester hours. Required courses are the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MAT 271 Calculus with Analytic Geometry II MA</td>
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<tr>
<td>MAT 272 Calculus with Analytic Geometry III MA</td>
<td>4</td>
</tr>
<tr>
<td>MAT 300 Mathematical Structures L</td>
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<tr>
<td>STP 420 Introductory Applied Statistics CS</td>
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<td>STP 421 Probability</td>
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<td>or STP 429 Experimental Statistics CS</td>
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<td><strong>Total</strong></td>
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The minor in Computational Mathematical Sciences consists of a minimum of 20 semester hours. Required courses are the following:

<table>
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<tbody>
<tr>
<td>MAT 271 Calculus with Analytic Geometry II MA</td>
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<tr>
<td>MAT 272 Calculus with Analytic Geometry III MA</td>
<td>4</td>
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<tr>
<td>MAT 342 Linear Algebra</td>
<td>3</td>
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<td>or MAT 343 Applied Linear Algebra</td>
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<tr>
<td>MAT 420 Scientific Computing</td>
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<tr>
<td>MAT 421 Applied Computational Methods CS</td>
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<td>MAT 423 Numerical Analysis I CS</td>
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It is recommended that students take MAT 243 Discrete Mathematical Structures.

**BIS CONCENTRATIONS**

Concentrations in computational mathematical sciences, mathematics, and statistics are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**SECONDARY EDUCATION—BAE**

**Mathematics.** This degree is offered through the Initial Teacher Certification program in the College of Education. Students pursuing a major in Secondary Education have an advisor in the College of Education and an advisor within the department of their academic specialization area.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

The academic specialization consists of the following required courses:

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<th>Credit Hours</th>
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<td>CSE 100 Principles of Programming with C++ CS</td>
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<td>or CSE 110 Principles of Programming Java CS</td>
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<tr>
<td>or CSE 205 Concepts of Computer Science CS</td>
<td>3</td>
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<tr>
<td>MAT 270 Calculus with Analytic Geometry I MA</td>
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<tr>
<td>MAT 271 Calculus with Analytic Geometry II MA</td>
<td>4</td>
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<tr>
<td>MAT 272 Calculus with Analytic Geometry III MA</td>
<td>4</td>
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<tr>
<td>MAT 300 Mathematical Structures L</td>
<td>3</td>
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<tr>
<td>or MAT 243 Discrete Mathematical Structures</td>
<td>3</td>
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COLLEGE OF LIBERAL ARTS AND SCIENCES

MAT 310 Introduction to Geometry ...........................................3
MAT 342 Linear Algebra .........................................................3
or MAT 343 Applied Linear Algebra (3)
MAT 370 Intermediate Calculus .............................................3
or MAT 371 Advanced Calculus I (3)
MAT 443 Introduction to Abstract Algebra ................................3
or MAT 445 Theory of Numbers (3)
or MAT 447 Cryptography (3)
MTE 483 Mathematics in the Secondary School .....................3
STP 420 Introductory Applied Statistics CS .............................3
Total .....................................................................................56

The methods in academic specialization courses for mathematics are MTE 482 Methods of Teaching Mathematics in Secondary School and MTE 494 ST: Advanced Methods of Teaching Secondary Mathematics. They are required as part of the Initial Teacher Certification program but cannot be counted as part of the 36-hour major requirement.

GRADUATE PROGRAMS

The faculty in the Department of Mathematics and Statistics offer programs leading to the degrees of Master of Natural Science, MA, and PhD. See the Graduate Catalog for requirements.

MATHEMATICS (MAT)

For more MAT courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalog/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M MAT 106 Intermediate Algebra. (3)
fall, spring, summer
Topics from basic algebra such as linear equations, polynomials, factoring, exponents, roots, and radicals. Credit is allowed for only MAT 106 or 113. Prerequisite: 1 year of high school algebra.

M MAT 113 College Algebra Plus. (5)
fell and spring
Topics from basic algebra such as linear equations, polynomials, factoring, exponents, roots, and radicals. Credit is allowed for only MAT 113 or 106 or 117. Prerequisite: 2 years of high school mathematics.

M MAT 117 College Algebra. (3)
fell, spring, summer
Linear and quadratic functions, systems of linear equations, logarithmic and exponential functions, sequences, series, and combinatorics. Credit is allowed for only MAT 117 or 113. Fee (online only). Prerequisite: MAT 106 or 2 years of high school algebra.

M MAT 119 Finite Mathematics. (3)
fell, spring, summer
Topics from linear algebra, linear programming, combinatorics, probability, and mathematics of finance. Prerequisite: MAT 113 or 117 (or its equivalent).

M MAT 142 College Mathematics. (3)
fell, spring, summer
Applies basic college-level mathematics to real-life problems. Appropriate for students whose major does not require MAT 117 or 170. Prerequisite: MAT 106 or 2 years of high school algebra.

M MAT 170 Precalculus. (3)
fell, spring, summer
Intensive preparation for calculus (MAT 260, 270, and 290). Topics include functions (including trigonometric), matrices, polar coordinates, vectors, complex numbers, and mathematical induction. Prerequisite with a grade of “B” or higher: MAT 106. Prerequisite with a grade of “C” (2.00) or higher: MAT 113 or 117 (or its equivalent) or 2 years of high school algebra.

M MAT 210 Brief Calculus. (3)
fell, spring, summer
Differential and integral calculus of elementary functions with applications. Not open to students with credit for MAT 260, 270, or 290. Fee (online only). Prerequisite: MAT 113 or 117 (or its equivalent).

M MAT 211 Mathematics for Business Analysis. (3)
fell, spring, summer
Topics in business analysis, including: Lagrange multipliers, linear programming, linear algebra, intermediate probability, random variables, discrete distributions, and continuous distributions. Prerequisite with a grade of “C” or higher: MAT 210 or instructor approval.

M MAT 242 Elementary Linear Algebra. (2)
fell, spring
Introduces matrices, systems of linear equations, determinants, vector spaces, linear transformations, and eigenvalues. Emphasizes development of computational skills. Prerequisite: 1 semester of calculus or instructor approval.

M MAT 243 Discrete Mathematical Structures. (3)
fell, spring
Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and mathematical reasoning, including induction. Emphasizes connections to computer science. Prerequisite: 1 semester of calculus or computer programming.

M MAT 251 Calculus for Life Sciences. (3)
fell and spring
Differential and integral calculus of elementary functions. Introduces differential and difference equations. Emphasizes applications to the life sciences. Not open to students with credit for MAT 210, 260, or 270. Prerequisite: MAT 170 (or its equivalent).

M MAT 260 Technical Calculus I. (3)
selected semesters
Analytic geometry, differential, and integral calculus of elementary functions, emphasizing physical interpretation and problem solving. Not open to students with credit for MAT 210, 270, or 290. Prerequisite: MAT 170 (or its equivalent).

M MAT 261 Technical Calculus II. (3)
selected semesters
Continuation of MAT 260. Prerequisite: MAT 260 or instructor approval.

M MAT 262 Technical Calculus III. (3)
selected semesters
Infinite series, an introduction to differential equations and elementary linear algebra. Prerequisite: MAT 261 (or its equivalent).

M MAT 270 Calculus with Analytic Geometry I. (4)
fell, spring, summer
Real numbers, limits and continuity, and differential and integral calculus of functions of 1 variable. Not open to students with credit for MAT 290. The sequence MAT 270 and 271 may be substituted for MAT 290 to satisfy requirements of any curriculum. Fee. Prerequisite with a grade of “C” (2.00) or higher: MAT 170 or satisfactory score on placement examination.

M MAT 271 Calculus with Analytic Geometry II. (4)
fell, spring, summer
Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, sequences, and series. Not open to students with credit for MAT 291. The sequence MAT 270, 271, 272 may be substituted to satisfy requirements for MAT 290 and 291. Fee. Prerequisite with a grade of “C” (2.00) or higher: MAT 270 (or its equivalent).

M MAT 272 Calculus with Analytic Geometry III. (4)
fell, spring, summer
Vector-valued functions of several variables, multiple integration, and introduction to vector analysis. The sequence MAT 270, 271, 272 may be substituted to satisfy requirements for MAT 290 and 291. Fee.
Prerequisite with a grade of "C" (2.00) or higher: MAT 271 (or its equivalent).

General Studies: MA

M MAT 274 Elementary Differential Equations. (3)
fall and spring or summer
Introduces ordinary differential equations, adapted to the needs of students in engineering and the sciences. Credit is allowed for only MAT 274 or 275 toward a mathematics degree. Prerequisites: MAT 271 (or its equivalent); MAT 272 (or its equivalent) recommended.

General Studies: MA

M MAT 275 Modern Differential Equations. (3)
fell spring
Introduces differential equations, theoretical and practical solution techniques. Applications. Problem solving using MATLAB. Credit is allowed for only MAT 275 or 274 toward a mathematics degree. Lecture, computing lab. Fee. Pre- or corequisite: MAT 271 (or its equivalent).

General Studies: MA

M MAT 290 Calculus I. (5)
selected semesters
Differential and integral calculus of elementary functions; topics from analytic geometry essential to the study of calculus. Prerequisite: MAT 170 (or its equivalent).

General Studies: MA

M MAT 291 Calculus II. (5)
selected semesters
Further applications of calculus, partial differentiation, multiple integrals, and infinite series. Prerequisite: MAT 290 (or its equivalent).

M MAT 294 Special Topics. (1–4)
selected semesters
Topics may include the following:

- Calculus for Engineers I. (3)
  fall, spring, summer
Limits and continuity, differential calculus of functions of one variable, introduction to integration. Not open to students with credit in MAT 270. Prerequisite: satisfactory score on the calculus readiness exam. Prerequisite with a grade of "C" or higher: MAT 170 (or its equivalent).

- Calculus for Engineers II. (3)
  fall, spring, summer
Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series. Not open to students with credit in MAT 271. Prerequisite with a grade of "C" or higher: MAT 294 Calculus for Engineers I.

- Calculus for Engineers III. (3)
  fall, spring, summer
Vector-valued functions of several variables, partial derivatives, multiple integration. Not open to students with credit in MAT 272. Prerequisite with a grade of "C" or higher: MAT 294 Calculus for Engineers II.

M MAT 300 Mathematical Structures. (3)
fell and spring
Logic and set theory, induction, functions, order and equivalence relations, cardinality. Emphasizes writing proofs. Prerequisite: 1 semester of calculus or instructor approval.

General Studies: L

M MAT 310 Introduction to Geometry. (3)
spring
Congruence, area, parallelism, similarity and volume, and Euclidean and non-Euclidean geometry. Prerequisite: MAT 272 (or its equivalent).

M MAT 340 Theory of Interest. (3)
fell and spring
Compound interest, discount rates, annuities, present values, depreciation, and bond valuations. Prerequisites: MAT 243 (or 300 or instructor approval); 1 semester of calculus.

M MAT 342 Linear Algebra. (3)
fall and spring or summer
Linear equations, matrices, determinants, vector spaces, bases, linear transformations and similarity, inner product spaces, eigenvectors, orthonormal bases, diagonalization, and principal axes. Credit is allowed for only MAT 342 or 343 toward a mathematics degree. Pre- or corequisite: MAT 272 (or its equivalent).

M MAT 343 Applied Linear Algebra. (3)
fell and spring
Solving linear systems, matrices, determinants, vector spaces, bases, linear transformations, eigenvectors, norms, inner products, decompositions, applications. Problem solving using MATLAB. Credit is allowed for only MAT 343 or 342 toward a mathematics degree. Lecture, computing lab.Fee. Pre-requisite: MAT 271 (or its equivalent).

M MAT 351 Mathematical Methods for Genetic Analysis. (3)
fell and spring
Discrete mathematics, probability, statistics, and associated computer packages. Applications to genomics, bioinformatics, forensics, and DNA/protein sequence patterns. Fee. Prerequisite: MAT 251 or 270 or instructor approval.

General Studies: CS

M MAT 362 Advanced Mathematics for Engineers and Scientists. (3)
fell, spring, summer
Vector analysis, Fourier analysis, and partial differential equations. Prerequisites: MAT 272 and 274 (or 275) (or their equivalents).

M MAT 370 Intermediate Calculus. (3)
fell and spring
Theory behind basic 1-variable calculus: continuity, derivative, Riemann integral, sequences, and series. Not open to students who have received a "C" (2.00) or higher in MAT 371. Credit is allowed for only MAT 370 or 371 toward a mathematics degree. Prerequisites: MAT 272, 300 (or 243).

M MAT 371 Advanced Calculus I. (3)
fell and spring
Real numbers, completeness, sequences/series, continuity, uniform theorems, derivative, Riemann integral, pointwise/uniform convergence, Taylor's theorem. Credit is allowed for only MAT 371 or 370 toward a mathematics degree. Prerequisites: MAT 272, 300.

M MAT 372 Advanced Calculus II. (3)
spring
Open, closed, compact sets in R^n, continuity, differentiation, partial differentiation, integration in R^n. Inverse/implicit function theorem. Not open to students with credit for MAT 460. Prerequisite: MAT 371. Pre- or corequisite: MAT 342 or 343.

M MAT 394 Special Topics. (1–4)
selected semesters
Topics may include the following:

- Introduction to Computational Molecular Biology. (2–3) Fee. Prerequisite: junior standing.

M MAT 410 Introduction to General Topology. (3)
one a year
Topological spaces, metric spaces, compactness, connectedness, and product spaces. Prerequisite: MAT 300 or 371 or instructor approval.

M MAT 415 Introduction to Combinatorics. (3)
fell
Enumerating permutations and combinations of sets and multisets, inclusion-exclusion, recurrence relations, generating functions, Pólya theory and combinatorial structures. Prerequisites: preferably both MAT 300 (or 243) and 342 (or 242) or only instructor approval.

M MAT 416 Introduction to Graph Theory. (3)
spring
Trees, cycles, matchings, planarity, connectivity, hamiltonicity, chromatic number, Ramsey theory with emphasis on proof techniques. Prerequisites: preferably both MAT 300 (or 243) and 342 (or 242) or only instructor approval.
M MAT 419 Introduction to Linear Programming. (3)
Spring
Simplex method, duality, and network flows. Applications to game theory, geometry, combinatorics, graph theory, and posets.
Prerequisites: a combination of CSE 100 (or 205 or 210) and MAT 300 (or 243) and 342 (or 242 or 343) or only instructor approval.
General Studies: CS
M MAT 420 Scientific Computing. (3)
fall
Surveys and applies programming languages, libraries, and scientific visualization tools. Programming assignments emphasize software development skills. Lecture, lab. Fee. Prerequisites: a combination of CSE 205 and MAT 274 (or 275) and 342 (or 343) (or their equivalents) or only instructor approval.
M MAT 421 Applied Computational Methods. (3)
fall and spring
Numerical methods for quadrature, differential equations, roots of nonlinear equations, interpolation, approximation, linear equations, floating-point arithmetic, and roundoff error. Prerequisites: both MAT 271 (or its equivalent) and fluency in computer programming (preferably FORTRAN) or only instructor approval.
General Studies: CS
M MAT 423 Numerical Analysis I. (3)
fall
Analysis and algorithms for numerical solutions linear/nonlinear equations, direct solvers, iterative procedures, optimization. Determination of eigenvalues. Elementary computer arithmetic. Prerequisites: both MAT 342 (or 343) and fluency in computer programming or only instructor approval.
General Studies: CS
M MAT 425 Numerical Analysis II. (3)
spring
Analysis of and algorithms for numerical interpolation, integration, and differentiation. Numerical solution of ordinary differential equations, and method of lines. Those seeking a methods survey course should take MAT 421. Prerequisites: both MAT 274 (or 275) and fluency in computer programming or only instructor approval. MAT 371 recommended.
General Studies: CS
M MAT 442 Advanced Linear Algebra. (3)
fall
Fundamentals of linear algebra, dual spaces, invariant subspaces, canonical forms, bilinear and quadratic forms, and multilinear algebra. Prerequisites: both MAT 300 and 342 (or 343) or only instructor approval.
M MAT 443 Introduction to Abstract Algebra. (3)
fall
Introduces concepts of abstract algebra. Not open to students with credit for MAT 444. Prerequisites: both MAT 300 and 342 (or 343) or only instructor approval.
M MAT 444 Intermediate Abstract Algebra. (3)
spring
Basic theory of groups, rings, and fields, including an introduction to Galois theory. Appropriate as preparation for MAT 543. Prerequisite: MAT 443 or graduate standing or instructor approval.
M MAT 445 Theory of Numbers. (3)
spring
Prime numbers, unique factorization theorem, congruences. Diophantine equations, primitive roots, and quadratic reciprocity theorem. Prerequisites: both MAT 300 and 342 (or 343) or only instructor approval.
M MAT 447 Cryptography. (3)
fall and spring
Block ciphers, stream ciphers, congruence arithmetic, information theory, public key cryptosystems, key exchange, electronic signatures. Prerequisites: CSE 100 (or 110); MAT 242 (or 342 or 343), 300.
M MAT 451 Mathematical Modeling. (3)
spring
Detailed study of 1 or more mathematical models that occur in the physical or biological sciences. May be repeated for credit with instructor approval. Prerequisites: both MAT 242 (or 342 or 343) and 274 (or 275) or only instructor approval.
General Studies: CS
M MAT 452 Introduction to Chaos and Nonlinear Dynamics. (3)
tail
Properties of nonlinear dynamical systems; dependence on initial conditions; strange attractors; period doubling; bifurcations; symbolic dynamics; Smale-Birkhoff theorem; and applications. Prerequisites: MAT 274 (or 275), 342 (or 242 or 343); MAT 371 is recommended.
M MAT 455 Introduction to Fractals and Applications. (3)
spring
Fractals; self-similar structures, fractals with iterated function systems of maps, computing fractals, fractal dimensions, chaotic dynamics on fractals, applications. Prerequisites: MAT 274 (or 275), 342 (or 242 or 343); MAT 371 recommended.
M MAT M 460 Vector Calculus. (3)
spring
Vectors, curvilinear coordinates, Jacobians, implicit function theorem, line and surface integrals, Green’s, Stokes’, and divergence theorems. Not open to students with credit for MAT 372. Prerequisites: MAT 242 (or 342 or 343), 272, 274 (or 275).
M MAT 461 Applied Complex Analysis. (3)
fall and summer
Analytic functions, complex integration, Taylor and Laurent series, residue theorem, conformal mapping, and harmonic functions. Prerequisite: MAT 272 (or its equivalent).
M MAT 462 Applied Partial Differential Equations. (3)
spring
Second-order partial differential equations, emphasizing Laplace, wave, and diffusion equations. Solutions by the methods of characteristics, separation of variables, and integral transforms. Prerequisites: MAT 242 (or 342 or 343), 274 (or 275).
M MAT 472 Intermediate Real Analysis I. (3)
fall
Introduces analysis in metric spaces with emphasis on the real line. Appropriate as preparation for MAT 570. Prerequisites: MAT 300, 342 (or 343).
M MAT 473 Intermediate Real Analysis II. (3)
spring
Analysis in $\mathbb{R}^n$: implicit function theorem, introduction to manifolds, Lebesgue integration, change of variables formula, convergence theorems for integrals. Prerequisite: MAT 472 or instructor approval.
M MAT 475 Differential Equations. (3)
tail
Linear and nonlinear ordinary differential equations, asymptotic behavior of solutions, stability, existence and uniqueness, limit sets, Poincaré-Bendixon theorem. Prerequisites: MAT 242 (or 342 or 343), 274 (or 275), 370 (or 371) (or their equivalents) or instructor approval.
M MAT 476 Partial Differential Equations. (3)
spring
First-order quasilinear, second-order linear (wave, Laplace, heat). Characteristics, harmonic functions, maximum principles, Fourier series, separation of variables. Prerequisites: MAT 242 (or 342 or 343), 274 (or 275 or 475), 370 (or 371) (or their equivalents) or instructor approval.
M MAT 484 Internship. (1–12)
selected semesters
M MAT 485 History of Mathematics. (3)
selected semesters
Topics from the history of the origin and development of mathematical ideas. Prerequisite: MAT 272 (or its equivalent).
M MAT 493 Honors Thesis/Research. (3)
selected semesters
M MAT 494 Special Topics. (1–4)
selected semesters
Topics may include the following:
• Independent Study/Research. (3)
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
Graduate-Level Courses. For information about courses numbered from 500 to 799, see the Graduate Catalog; or access www.asu.edu/catalog on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.
MATHMATICS EDUCATION (MTE)

For more MTE courses, see the "Course Prefixes" table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M MTE 180 Theory of Elementary Mathematics. (3)
- fall, spring, summer
  Number systems, intuitive geometry, elementary algebra, and measurement. Intended for prospective elementary school teachers. Prerequisites: MAT 113, 142 (or 117 or its equivalent).

M MTE 181 Theory of Elementary Mathematics. (3)
- once a year
  Continuation of MTE 180. Fee. Prerequisite: MTE 180 or instructor approval.

M MTE 380 Arithmetic in the Elementary School. (3)
- once a year
  Historical numeration systems, overview of elementary number theory, including primes, factorization, divisibility, bases, modular systems, linear congruence, and continued fractions. Prerequisite: MTE 181 or instructor approval.

M MTE 381 Geometry in the Elementary School. (3)
- selected semesters
  Informal geometry, including concepts of length, area, volume, similarity, and congruence. Classification of figures, straightedge and compass constructions, and motion geometry. Prerequisite: MTE 380 or instructor approval.

M MTE 402 Service Learning. (3)
- fall and spring
  K–12 tutoring and mentoring internship related to academic course work in mathematics education. Requires weekly reflective reading and writing. May be repeated for credit. Internship. Fee. Pre- or corequisite: MTE 180 or instructor approval.

M MTE 482 Methods of Teaching Mathematics in Secondary School. (3)
- fall
  Examines secondary school curricular material and analyzes instructional devices. Teaching strategies, evaluative techniques, diagnosis, and remediation and problem solving. Fee. Prerequisite: instructor approval.

M MTE 483 Mathematics in the Secondary School. (3)
- spring
  Topics in geometry, number theory, algebra, and analysis. Emphasizes unifying principles. Prerequisite: MAT 310 or instructor approval.

M MTE 484 Internship. (1–12)
- selected semesters

M MTE 494 Special Topics. (1–4)
- fall and spring
  Topics may include the following:
  - Advanced Methods of Teaching Secondary Mathematics. (3)
  - Continuation of MTE 482. Prerequisite: MTE 482.
  Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 63.
  Graduate-Level Courses. For information about courses numbered from 500 to 799, see the Graduate Catalog, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see "Graduate-Level Courses," page 62.

STATISTICS AND PROBABILITY (STP)

M STP 220 Conceptual Statistics. (3)
- fall and spring
  Treats the concepts and vocabulary needed to evaluate statistical reports on health, technology, and society. Aggressively emphasizes understanding over computation. Lecture, teamwork. Prerequisites: MAT 113, 142 (or 117 or its equivalent). General Studies: CS

M STP 226 Elements of Statistics. (3)
- fall, spring, summer
  Basic concepts and methods of statistics, including descriptive statistics, significance tests, estimation, sampling, and correlation. Not open to majors in mathematics or the physical sciences. Prerequisites: MAT 113, 142 (or 117 or its equivalent). General Studies: CS

M STP 231 Statistics for Biosciences. (3)
- fall, spring, summer
  Concepts and methods of statistics; display and summary of data, interval estimation, hypothesis testing, correlation, regression. Applications to biological sciences. Prerequisite with a grade of "C" or higher: MAT 113 or 117 or 142 (or their equivalents).

M STP 294 Special Topics. (1–4)
- selected semesters
  Topics may include the following:
  - Statistics for Biosciences. (3)

M STP 326 Intermediate Probability. (3)
- fall and spring
  Probability models and computations, joint and conditional distributions, moments, and families of distributions. Topics in stochastic processes, simulation, and statistics. Prerequisite: MAT 210 (or its equivalent). General Studies: CS

M STP 420 Introductory Applied Statistics. (3)
- fall, spring, summer
  Introductory probability, descriptive statistics, sampling distributions, parameter estimation, tests of hypotheses, chi-square tests, regression analysis, analysis of variance, and nonparametric tests. Prerequisite: MAT 113 or 117 (or its equivalent). General Studies: CS

M STP 421 Probability. (3)
- fall
  Laws of probability, combinatorial analysis, random variables, probability distributions, expectations, moment-generating functions, transformations of random variables, and central limit theorem. Prerequisite: MAT 272 (or its equivalent).

M STP 423 Stochastic Processes. (3)
- spring
  Markov chains, stationary distributions, pure jump processes, 2-D order processes, and other topics in stochastic processes. Prerequisites: MAT 342; STP 421.

M STP 427 Mathematical Statistics. (3)
- spring
  Limiting distributions, interval estimation, point estimation, sufficient statistics, and tests of hypotheses. Prerequisites: a combination of MAT 371 and STP 420 and 421 or only instructor approval.

M STP 429 Experimental Statistics. (3)
- spring
  Statistical inference for controlled experimentation. Multiple regression, correlation, analysis of variance, multiple comparisons, and nonparametric procedures. Prerequisite: STP 420 (or its equivalent). General Studies: CS

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

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

DEPARTMENT OF MATHEMATICS AND STATISTICS

619
Department of Military Science

Army ROTC

www.asu.edu/clas/military

480/965-3318

SS 330

Lieutenant Colonel Kirk E. McIntosh, Chair

Professor: McIntosh

Assistant Professors: Barclay, Caryl, Hansen-Kaufcheck, Murdock, Ranalli

Instructors: Kuhlmann, Ringenoldus, Stover, Utley

PURPOSE

The Department of Military Science, or Army ROTC (Reserve Officers’ Training Corps), is a four-year or two-year program that consists of the basic and the advanced courses. It is one of the best leadership courses in the country and is part of a student’s college curriculum. The curriculum prepares students with the tools, training, and experiences that will help them succeed in any competitive environment. During classes and field training, students learn firsthand what it takes to lead others and motivate groups and how to conduct missions as an officer in the U.S. Army. Upon successful completion of the advanced course and college graduation, students will earn a commission in the U.S. Army as a second lieutenant and become a leader for life.

In addition to the military science curriculum, courses in national defense studies are both an integral and parallel source of the department’s program.

GENERAL INFORMATION

Basic Course. Any student who is enrolled in ASU (or approved by the professor of military science) can enroll in military science basic courses. The basic course (MIS 101, 102, 201, and 202) takes place during the first two years in college as elective courses. Each course includes a lab each semester. Students learn basic military skills and the fundamentals of leadership and begin the groundwork toward becoming an Army leader. Students may enroll in basic course classes without a military commitment.

Leader’s Training Course (Two-Year Program). Scholars who want to achieve something greater than a college degree and aspire to be leaders may join the Army ROTC program by attending a four-week summer Leader’s Training Course (LTC) that consists of intense classroom and field training. This course is an accelerated version of the two-year basic course listed above and qualifies students for enrollment in the advanced course provided they have two years of college remaining (undergraduate or graduate). Students who attend this course receive a stipend; transportation to and from Fort Knox, Kentucky; housing; and meals. Those who want to receive four semester hours credit for this course may enroll in the ASU summer program, MIS 205 Leader’s Training Course. Students who attend this course may also qualify for a two-year scholarship upon successful completion.

Advanced Course. The advanced course takes place during a student’s last two years in college as elective courses (MIS 301, 302, 401, and 402). Each course includes a lab each semester plus a summer leadership camp. Students learn advanced military tactics and gain experience in team organization, planning, and decision making. To benefit from the leadership training in the advanced course, all students must have completed either the basic course (four-year program) or have attended the LTC (two-year program). Students must meet the following qualifications to be enrolled in the advanced course:

1. be a citizen of the United States;
2. be of sound physical condition and pass the U.S. Army physical fitness test;
3. meet the required professional military educational requirements;
4. be at least 17 years of age for entrance into the advanced course and be able to complete all commissioning requirements before age 30 (which can be waived to age 32); and
5. commit to accept a commission and serve as an officer in the U.S. Army on Active Duty or in a Reserve Component (U.S. Army Reserve or Army National Guard) upon college graduation.

Leadership Development and Assessment Course (Advanced Course Program). Every ROTC cadet who enters into the Advanced Course attends the Leader Development and Assessment Course. It is a four-week summer course designed to evaluate and train all Army ROTC cadets. This course normally takes place between the junior and senior years of college and is conducted at Fort Lewis, Washington. Students who attend this course receive a stipend, transportation to and from camp, housing, and meals. Those who want to receive four semester hours credit for this course may enroll in the ASU summer program, MIS 303 National Advanced Leadership Camp.

The Commitment. Army ROTC cadets who receive an Army ROTC scholarship or enter the Army ROTC Advanced Course must commit to being commissioned a second lieutenant in the U.S. Army and to completing a period of service with the Army. Students may serve full-time on active duty, part-time in either the U.S. Army Reserve or the Army National Guard, or a combination of full-time and part-time.

Scholarship Programs. Students who accept an Army ROTC scholarship must also commit to accepting a commission and serving as an Officer in the U.S. Army on Active Duty or in a Reserve Component (U.S. Army Reserve or Army National Guard) upon college graduation. Scholarships provide either 100 percent costs for tuition, labs, and fees; or, costs for room and board up to the amount
of tuition costs. In addition, scholarship students receive a book stipend of $450 per semester. Army ROTC offers two-, three-, and four-year scholarship programs to outstanding young men and women based on the time remaining to complete a degree. Scholarships are awarded based on a student’s merit and grades, not financial need.

1. High School four-year: The national high school four-year, active duty scholarship is for high school students planning on attending a four-year college program. Applications should be submitted by November 15. Applications submitted past that date are considered; however, late applications may not be as competitive due to selection time frames. Applications may be obtained at www.rotc.usaac.army.mil.

2. College four-year: These active duty scholarships are for college freshmen in their first year of a five-year undergraduate plan. Contact the department for more information.

3. College three- and two-year: These active duty scholarships are for students already enrolled in a college or university with three or two academic years remaining.

4. Guaranteed Reserve Forces Duty: These reserve component, two- and three-year scholarships are strictly dedicated for those students desiring to serve in the U.S. Army Reserve or Army National Guard.

Living Expenses. Scholarship and all Advanced Course students also receive a monthly, nontaxable living allowance for each school year. The amount depends on a student’s level in the ROTC curriculum: freshman: $300; sophomore: $350; junior: $450; senior: $500 per month.

Simultaneous Membership Program. Under this program, ROTC students may simultaneously be members of the Army Reserve or the National Guard. The combination of advanced course living allowance and pay for Army Reserve or National Guard participation can provide between $550 and $1,000 per month.

Graduate and Professional Studies Programs. Graduate students may also enroll in the ROTC program. Outstanding students who desire to earn graduate or professional degrees may request and receive an educational, active duty delay of up to four years.

Nurse Program. By joining Army ROTC, nursing students can enhance their leadership skills and critical-thinking abilities while obtaining financial support. Besides great scholarship opportunities, Army ROTC nurse cadets may also qualify for cash bonuses. In addition, nurse cadets have an opportunity for a unique summer nursing experience. The paid, three-week Nurse Summer Training Program assigns cadets to Army hospitals throughout the U.S. and Germany. This program is designed to introduce nurse cadets to the Army Medical Department and to the roles and responsibilities of an Army nurse. Cadets work under the supervision of an Army nurse and obtain hands-on experience. This one-on-one clinical experience allows students to hone their clinical skills, develop their problem-solving techniques, and become comfortable with developing their professional skills as a member of the U.S. Army Health-care Team. Being an Army nurse provides opportunities not found in the civilian world. Army nurses also have the opportunity to train and serve in a variety of specialties.

MILITARY SCIENCE (MIS)

M MIS 101 Introduction to the Military I. (3)
fall
Overview of mission, organization, and structure of the Army and its role in national defense; discussion of current military issues. 3 hours lecture/conference, 2 hours lab.

M MIS 102 Introduction to the Military II. (3)
spring
Introduces problem-solving methods, critical thinking, decision making, and group cohesion as applied in a military environment. 3 hours lecture/conference, 2 hours lab. Prerequisite: MIS 101.

M MIS 201 Introduction to Leadership Dynamics I. (3)
fall
Introduces interpersonal dynamics involved in military team operations; theory and application of military leadership principles. 3 hours lecture/conference, 2 hours lab.

M MIS 202 Introduction to Leadership Dynamics II. (3)
spring
Continuation of MIS 201. 3 hours lecture/conference, 2 hours lab. Prerequisite: MIS 201.

M MIS 205 Leader’s Training Course. (4)
summer
6-week training program emphasizing practical hands-on skills and leadership development. Taken in lieu of MIS 101, 102, 201, 202. Conducted at Fort Knox, Kentucky.

M MIS 301 Advanced Military Science I. (3)
fall
Theory and dynamics of the individual soldier and military units in offensive combat operations. 3 hours lecture/conference, 2 hours Leadership Practical Application, 1 2-day field exercise. Fee. Prerequisites: MIS 101 and 102 and 201 and 202 (or their equivalents).

M MIS 302 Advanced Military Science II. (3)
spring
Theory and dynamics of military units in defensive combat operations. 3 hours lecture/conference, 2 hours Leadership Practical Application, 1 2-day field exercise. Fee. Prerequisites: MIS 101 and 102 and 201 and 202 (or their equivalents).

M MIS 303 National Advanced Leadership Camp. (4)
summer
6-week training program emphasizing leadership development and advanced military skills, including tactics, land navigation, and physical training. Conducted at Fort Lewis, Washington. Prerequisites: MIS 301, 302.

M MIS 401 Advanced Military Science III. (3)
fall
Military legal system; preparation and conduct of military training; leadership development; ethics and professionalism of the military officer. 3 hours lecture/conference, 2 hours Leadership Practical Application, 1 2-day field exercise. Fee. Prerequisites: MIS 301, 302.

M MIS 402 Advanced Military Science IV. (3)
spring
Military correspondence; career planning and personal affairs in service; conduct of training; leadership development; ethics and professionalism of the military officer. 3 hours lecture/conference, 2 hours Leadership Practical Application, 1 2-day field exercise. Fee. Prerequisites: MIS 301, 302.

M MIS 410 American Defense Policy I. (3)
fall
Evolution, organization, and execution of U.S. national security policy. General Studies: SB
The major in Philosophy consists of 45 semester hours, 33 of which must be upper-division hours. In exceptional cases, up to nine semester hours may be in related fields as approved by the undergraduate advisor. Required courses are as follows:

- PHI 300 Philosophical Argument and Exposition L .................3
- PHI 301 History of Ancient Philosophy HU, H .........................3
- PHI 302 History of Modern Philosophy HU, H .........................3
- PHI 305 Ethical Theory HU ..................................................3
  or PHI 335 History of Ethics HU (3)
- PHI 312 Theory of Knowledge HU ...........................................3
  or PHI 314 Philosophy of Science HU (3)
- PHI 316 Metaphysics HU ......................................................3
  or PHI 317 Philosophy of Mind HU (3)
- PHI 333 Introduction to Symbolic Logic ..................................3

Choose two courses below ...................................................6
- PHI 401 Rationalism (3)
- PHI 402 Empiricism HU (3)
- PHI 403 Contemporary Analytic Philosophy HU (3)
- PHI 413 Advanced Symbolic Logic (3)
- PHI 420 Topics in Philosophy (3)
- PHI 494 Special Topics (3)

Total .............................................................................................27

Exceptions are granted by special permission of the chair only. PHI 420 may be repeated for credit.

Students planning to do graduate work in philosophy should consult with an advisor to develop an appropriate selection of courses at the 300 and 400 levels. A minimum grade of “C” (2.00) is necessary for each course used to fulfill the major requirements. See “College Graduation Requirements,” page 503.

MINOR IN PHILOSOPHY

A minor in Philosophy consists of 18 semester hours, of which at least 12 must be in the upper division and approved by an advisor in the department. All courses must be passed with a minimum grade of “C” (2.00).

CERTIFICATE IN ETHICS

The Ethics Certificate consists of 18 semester hours approved by an advisor in the department. The student must take PHI 305 or 335. At least 15 hours must be chosen from PHI 105, 120, 304, 305, 306, 307, 309, 310, 320, 335, and (when its topic is within ethics) PHI 420. One course outside this list, and perhaps outside the department, may be used with written approval from the director of undergraduate studies. All courses must be passed with a minimum grade of “C” (2.00).

CERTIFICATE IN SYMBOLIC SYSTEMS

The Certificate in Symbolic Systems consists of 28 semester hours approved by an advisor in the Department of Philosophy and divided evenly among computer science and engineering, psychology, and philosophy as follows:

1. CSE 205, 210, and 240;
2. PSY 230 and 290 and either PSY 323, 324, or 437; and
3. either PHI 312 or 314, either PHI 315 or 317, and
either PHI 319 or 333.

Students must satisfy the prerequisites for the listed courses. With written approval from the director of undergraduate studies in the Department of Philosophy, one substitution of a course from outside this list may be made. All courses must be passed with a minimum grade of “C” (2.00).

BIS CONCENTRATIONS

Concentrations in ethics and philosophy (with options in history and philosophy of science, and symbolic systems) are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Students may also choose a concentration from any approved certificate program. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.
DEPARTMENT OF PHILOSOPHY

GRADUATE PROGRAM

The faculty in the Department of Philosophy offer a graduate program leading to the MA and PhD degrees. See the Graduate Catalog for requirements.

PHILOSOPHY (PHI)

For more PHI courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M PHI 101 Introduction to Philosophy. (3)
fall, spring, summer
Explores issues that philosophers have traditionally considered, including morality, reality, and knowledge.
General Studies: HU

M PHI 103 Principles of Sound Reasoning. (3)
fall, spring, summer
Fallacies, validity, and soundness of arguments. May include syllogistic, elementary symbolic, inductive logic, and scientific method. Prerequisite: ENG 101 or 105.
General Studies: L/HU

M PHI 105 Introduction to Ethics. (3)
onece a year
Philosophical examination of such questions as, How should we live? Is morality a social invention? Does anything matter?
General Studies: HU

M PHI 120 Introduction to Medical and Bioethics. (3)
onece a year
Philosophical examination of moral problems that arise in medicine and biology, e.g., end-of-life, reproduction, and patient's rights.
Lecture, discussion.

M PHI 300 Philosophical Argument and Exposition. (3)
spring
Develops techniques of philosophical argument and exposition. Frequent written exercises. Course content may vary with instructor. Prerequisites: major; instructor approval.
General Studies: L

M PHI 301 History of Ancient Philosophy. (3)
fall
History of Western philosophy from its beginnings through the Hellenistic period.
General Studies: HU, H

M PHI 302 History of Modern Philosophy. (3)
spring
History of Western philosophy from the Renaissance through Kant.
General Studies: HU, H

M PHI 304 Existentialism. (3)
selected semesters
Covers such topics as absurdity, authenticity, the meaning of life and death, responsibility, and subjectivity. May include readings in phenomenology. Prerequisite: PHI 101 or 103 or 105 or instructor approval.
General Studies: HU

M PHI 305 Ethical Theory. (3)
onece a year
Current theories about the nature of morality (metaethics) and about what is right and wrong (normative ethics). Prerequisite: PHI 105 or 306 or 307 or 309 or 335 or instructor approval.
General Studies: HU

M PHI 306 Applied Ethics. (3)
fall, spring, summer
Philosophical discussion of contemporary moral and political issues, such as abortion, euthanasia, animal rights, affirmative action, and sexual rights.
General Studies: HU

M PHI 307 Philosophy of Law. (3)
onece a year
Nature and source of law and its relation to morality. Legal rights, legal enforcement of morals, civil disobedience, liability and responsibility, punishment, judicial reasoning, justice, property, and differences between theories of natural and positive law.
General Studies: HU

M PHI 308 Philosophy of Art. (3)
onece a year
Central problems in philosophy of art, e.g., the nature of a work of art, modern and traditional theories of art, aesthetic perception and experience, and objectivity and relativity in art criticism.
General Studies: HU

M PHI 309 Social and Political Philosophy. (3)
onece a year
Alternative principles and methods relevant to problems of human association and conflict; discusses justice and power, freedom and equality, and autonomy and order. Prerequisite: PHI 105 or 305 or instructor approval.
General Studies: HU

M PHI 310 Environmental Ethics. (3)
onece a year
Examines a full range of philosophical positions pertaining to our moral relationship to the natural world; anthropocentrism, individualism, biocentrism.
General Studies: HU

M PHI 311 Philosophy in Literature. (3)
onece a year
Selected works of literature introducing philosophical problems such as the nature of moral goodness and people's relation to the world and other people.
General Studies: HU

M PHI 312 Theory of Knowledge. (3)
onece a year
Nature, sources, and limits of human knowledge. Topics may include truth, a priori knowledge, empirical knowledge, perception, induction, and skepticism. Prerequisite: PHI 101 or 103 or 300 or 301 or 302 or 333.
General Studies: HU

M PHI 314 Philosophy of Science. (3)
onece a year
Structure and justification of scientific theories, explanation, and theory change. Roles of observation and laws, theoretical concepts and entities, reduction, probability, confirmation, space and time, and causation. Cross-listed as HPS 314. Credit is allowed for only HPS 314 or PHI 314.
General Studies: HU

M PHI 315 Philosophy of Language. (3)
onece a year
Problems pertaining to the nature of language, including meaning, reference, truth, definition, analyticity, translatability, synonymy, and contributions of contemporary linguistics. Prerequisite: PHI 103 or 300 or 333.
General Studies: HU

M PHI 316 Metaphysics. (3)
onece a year
Problems pertaining to the nature of reality. Topics may include nature of person, minds, substance, universals, space, time, causation, and modality. Prerequisite: PHI 101 or 303 or 300 or 301 or 333.
General Studies: HU

M PHI 317 Philosophy of Mind. (3)
onece a year
Nature of consciousness. Common sense view of mind, behaviorism, materialism, dualism, functionalism, self-knowledge, and knowledge of other minds. Prerequisite: PHI 101 or 103 or 300 or 301 or 302 or 333.
General Studies: HU

M PHI 318 Philosophy of Religion. (3)
onece a year
Classical arguments for the existence of God. Argument from evil against the existence of God. Justification of religious belief. Prerequisite: any PHI or REL course.
General Studies: HU

M PHI 319 Philosophy of Computing. (3)
selected semesters
Philosophical problems surrounding the theory of computation. Turing machines, mind and AI, neural network computing, ethics, and epistemology of computing. Lecture, lab, discussion.
General Studies: CS/HU

M PHI 320 Bioethics. (3)
once a year
Critical examination of moral questions arising in biomedical contexts, particularly due to new technologies and scientific discoveries.

M PHI 325 Philosophy of Social Science. (3)
selected semesters
Philosophical problems surrounding the aims, structure, and methods of the social sciences.
General Studies: HUS/BS

M PHI 333 Introduction to Symbolic Logic. (3)
once a year
Symbolic techniques, emphasizing deductions and proofs in the propositional and 1st-order predicate calculi.

M PHI 335 History of Ethics. (3)
once a year
Major works of moral philosophy, both ancient and modern, such as those by Plato, Aristotle, Hobbes, Hume, Kant, and Mill. Prerequisite: PHI 101 or 105 or 305 or 306 or 307 or 309 or instructor approval.

M PHI 401 Rationalism. (3)
selected semesters
Examines classical philosophical rationalism, as in Descartes, Spinoza, Malebranche, or Leibniz. Contemporary rationalist thought may also be examined. Prerequisites: PHI 302 and 305 (or 309 or 312 or 316 or 317).

M PHI 402 Empiricism. (3)
selected semesters
Examines representatives of either classical or contemporary philosophical empiricism, e.g., Bacon, Hobbes, Locke, Butler, Berkeley, Reid, Hume, Mill, Carnap, and Ayer. Prerequisites: PHI 302 and 305 (or 309 or 312 or 316 or 317).

M PHI 403 Contemporary Analytic Philosophy. (3)
once a year
Aims and methods of such 20th-century philosophers as Frege, Moore, Russell, Wittgenstein, Carnap, Ayer, Wisdom, Ryle, Austin, Strawson, Quine, and Sellars, with application to metaphysics and epistemology. Prerequisites: PHI 302 and 312 (or 314 or 315 or 316 or 317 or 401 or 402).
General Studies: HU

M PHI 413 Advanced Symbolic Logic. (3)
selected semesters
Properties of formal systems axiomatizing propositional and 1st-order predicate logic. May also include modal logic, number theory, and limits of logicism. Prerequisite: PHI 333.

M PHI 420 Topics in Philosophy. (3)
once a year
Course descriptions on file in department. May be repeated for credit. Topics may include the following:
• History of Philosophy
• Metaphysics/Epistemology
• Philosophy of Language/Logic
• Philosophy of Science
• Value Theory
Prerequisite: a relevant upper-division PHI course or instructor approval.

M PHI 428 Immunosophiology. (3)
selected semesters
Integrates immunology and philosophy, including psychoneuroimmunology and the mind-body problem, and immunologic/psychologic perspectives on self and self-identity. Discussion, original literature readings, and written assignments. Cross-listed as MIC 428. Credit is allowed for only MIC 428 or PHI 428. Pre- or corequisite: MIC 420 or PHI 317 or instructor approval.

M PHI 494 Special Topics. (3)
selected semesters

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

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

Department of Physics and Astronomy

phy.asu.edu
480/965-3561
PS F470

Barry G. Ritchie, Chair

Regents' Professors: Smith, Spence, Starrfield, Windhorst

Professors: Alarcon, Bennett, Burstein, Chamberlin, Comfort, Cowley, Doak, Dow, Hester, Lindsay, Menéndez, Ponce, Rez, Ritchie, Sankey, Schmidt, Thorpe, Tillery, Treacy, Tsen, Tsong, Venable

Associate Professors: Culbertson, Drucker, Herbots, Marzke, McCartney, Newman

Assistant Professors: Belitsky, Desch, Lebed, Ortiz, Shumway

Distinguished Research Professor: Bauer

PHYSICS—BS

Students majoring in Physics may pursue one of two options.

Option I. Designed for students who wish to pursue physics at the bachelor or graduate degree levels, option I consists of the following required courses:

Choose between the course combinations below.........................4

PHY 150 Physics I SQ (4) ...........................................4

—— or ———
PHY 121 University Physics I: Mechanics SQ 2 (3)
PHY 122 University Physics Laboratory I SQ 1 (1)

Choose between the course combinations below.........................4

PHY 151 Physics II SQ (4) ...........................................4

—— or ———
PHY 131 University Physics II: Electricity and Magnetism SQ 2 (3)
PHY 132 University Physics Laboratory II SQ 1 (1)

PHY 201 Mathematical Methods in Physics I CS .....................3
PHY 252 Physics III SQ ...........................................4

PHY 302 Mathematical Methods in Physics II .........................2
PHY 310 Classical Particles, Fields, and Matter I ....................3
PHY 311 Classical Particles, Fields, and Matter II ...................3
PHY 314 Quantum Physics I .......................................3
PHY 315 Quantum Physics II ......................................3
PHY 333 Electronic Circuits and Measurements .......................3
PHY 334 Advanced Laboratory II L 1 ...............................2
PHY 412 Classical Particles, Fields, and Matter III ..................3
PHY 416 Quantum Physics III .....................................3
PHY 441 Statistical and Thermal Physics .............................3
DEPARTMENT OF PHYSICS AND ASTRONOMY

PHY 465 Advanced Laboratory II .......................... 2
Total .............................................................. 45

1 Both PHY 121 and 122 must be taken to secure SQ credit.
2 Both PHY 131 and 132 must be taken to secure SQ credit.
3 Both PHY 334 and 420 must be taken to secure L credit.

Supporting mathematics courses are as follows:

Choose between the course combinations below ......................... 12 or 10
  MAT 270 Calculus with Analytic Geometry I MA (4)
  MAT 271 Calculus with Analytic Geometry II MA (4)
  MAT 272 Calculus with Analytic Geometry III MA (4)
  MAT 290 Calculus I MA (5)
  MAT 291 Calculus II (5)

Additional courses in physics and related fields are selected with the approval of the advisor. French, German, or Russian is strongly recommended to fulfill the foreign language requirement.

Option II. The interdisciplinary option II is designed for students choosing to obtain an undergraduate physics preparation for entry into other professions or graduate programs. A total of 53 hours are required, including the following courses:

Choose between the course combinations below ......................... 4
  PHY 150 Physics I SQ (4)
  PHY 121 University Physics I: Mechanics SQ (3)
  PHY 122 University Physics Laboratory I SQ (1)
  PHY 151 Physics II SQ (4)
  PHY 131 University Physics II: Electricity and Magnetism SQ (3)
  PHY 132 University Physics Laboratory II SQ (1)
  PHY 201 Mathematical Methods in Physics I CS ...... 3
  PHY 252 Physics II SQ ..................................... 3
  PHY 302 Mathematical Methods in Physics II ........ 2
  PHY 310 Classical Particles, Fields, and Matter I ...... 3
  PHY 311 Classical Particles, Fields, and Matter II .... 3
  PHY 314 Quantum Physics .................................. 3
  PHY 315 Quantum Physics II .............................. 3
  PHY 333 Electronic Circuits and Measurements ...... 3
  PHY 334 Advanced Laboratory I L ........................... 2
  PHY 412 Classical Particles, Fields, and Matter III ... 3
  PHY 441 Statistical and Thermal Physics I .............. 3
Total .............................................................. 40

1 Both PHY 121 and 122 must be taken to secure SQ credit.
2 Both PHY 131 and 132 must be taken to secure SQ credit.
3 Both PHY 334 and 420 must be taken to secure L credit.

The remaining courses are selected from physics and an area of concentration as approved by the student’s advisor. Possible areas of concentration are astronomy, astrophysics, materials science, physical chemistry, applied mathematics, geophysics, biological physics, philosophy of science, scientific journalism, and premedical and prelaw programs. French, German, or Russian is strongly recommended to fulfill the foreign language requirement.

Supporting mathematics courses are as follows:

Choose between the course combinations below ......................... 12 or 10

MAT 270 Calculus with Analytic Geometry I MA (4)
MAT 271 Calculus with Analytic Geometry II MA (4)
MAT 272 Calculus with Analytic Geometry III MA (4)
MAT 290 Calculus I MA (5)
MAT 291 Calculus II (5)

Emphasis in Astronomy

The astronomy faculty offer courses in astronomy both for science majors and for science and physics majors. For an emphasis in astronomy, the following courses (or their equivalents) should be taken:

AST 321 Introduction to Planetary and Stellar Astrophysics SQ (3)
AST 322 Introduction to Galactic and Extragalactic Astrophysics SQ (3)
AST 323 Introduction to Planetary and Stellar Astrophysics SQ (3)
AST 324 Introduction to Galactic and Extragalactic Astrophysics SQ (3)
AST 325 Introduction to Galactic and Extragalactic Astrophysics SQ (3)

Choose between the course combinations below ......................... 4
  PHY 150 Physics I SQ (4)
  PHY 121 University Physics I: Mechanics SQ (3)
  PHY 122 University Physics Laboratory I SQ (1)
  PHY 151 Physics II SQ (4)
  PHY 131 University Physics II: Electricity and Magnetism SQ (3)
  PHY 132 University Physics Laboratory II SQ (1)
  PHY 252 Physics III SQ ..................................... 4
Approved upper-division electives ................................. 4
Total .............................................................. 24

1 Both AST 113 and 321 must be taken to secure SQ credit.
2 Both AST 114 and 322 must be taken to secure SQ credit.

MINOR IN ASTRONOMY

The minor in Astronomy consists of a minimum of 24 semester hours. Required courses are as follows:

AST 113 Astronomy Laboratory I SQ (1)
AST 114 Astronomy Laboratory II SQ (1)
AST 321 Introduction to Planetary and Stellar Astrophysics SQ (3)
AST 322 Introduction to Galactic and Extragalactic Astrophysics SQ (3)
AST 323 Introduction to Planetary and Stellar Astrophysics SQ (3)
AST 324 Introduction to Galactic and Extragalactic Astrophysics SQ (3)

Choose between the course combinations below ......................... 4
  PHY 150 Physics I SQ (4)
  PHY 121 University Physics I: Mechanics SQ (3)
  PHY 122 University Physics Laboratory I SQ (1)
  PHY 151 Physics II SQ (4)
  PHY 131 University Physics II: Electricity and Magnetism SQ (3)
  PHY 132 University Physics Laboratory II SQ (1)
  PHY 252 Physics III SQ ..................................... 4
Approved upper-division electives ................................. 4
Total .............................................................. 24

1 Both AST 113 and 321 must be taken to secure SQ credit.
2 Both AST 114 and 322 must be taken to secure SQ credit.
3 Both PHY 121 and 122 must be taken to secure SQ credit.
4 Both PHY 131 and 132 must be taken to secure SQ credit.

Electives are chosen with approval of an astronomy advisor from upper-division courses in physics and astronomy.

MINOR IN PHYSICS

The minor in Physics consists of a minimum of 29 semester hours. Required courses are as follows:

Choose between the course combinations below: 

**PHYSICS (PHY)**

- PHY 150 Physics I SQ (4)
- PHY 121 University Physics I: Mechanics SQ (3)
- PHY 122 University Physics Laboratory I SQ (1)

Choose between the course combinations below:

- PHY 151 Physics II SQ (4)
- PHY 131 University Physics II: Electricity and Magnetism SQ (3)
- PHY 132 University Physics Laboratory II SQ (1)

**MATHEMATICS (MAT)**

- MAT 270 Calculus with Analytic Geometry I MA (4)
- MAT 271 Calculus with Analytic Geometry II MA (4)
- MAT 272 Calculus with Analytic Geometry III MA (4)

Choose between the course combinations below:

- PHY 150 Physics I SQ (4)
- PHY 151 Physics II SQ (4)

**Approved electives**

- PHY 122 University Physics Laboratory I SQ (1)
- PHY 131 University Physics II: Electricity and Magnetism SQ (3)
- PHY 132 University Physics Laboratory II SQ (1)

Selected courses must be completed with a grade of C (2.00) or higher before applying to the ITC program:

- PHY 150 and 151 or PHY 121, 122, 131, and 132.

- Both PHY 121 and 122 must be taken to secure SQ credit.
- Both PHY 131 and 132 must be taken to secure SQ credit.

Electives are chosen with approval of the physics advisor from upper-division courses in physics and astronomy.

**BIS CONCENTRATIONS**

Concentrations in astronomy and physics are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see the “School of Interdisciplinary Studies,” page 139.

**SECONDARY EDUCATION—BAE**

Physics. This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education have an advisor in the College of Education and an advisor within the department of their academic specialization area.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

The following courses must be completed with a grade of C (2.00) or higher before applying to the ITC program:

- PHY 150 and 151 or PHY 121, 122, 131, and 132.

- Both PHY 121 and 122 must be taken to secure SQ credit.
- Both PHY 131 and 132 must be taken to secure SQ credit.

This academic specialization consists of 48 semester hours. Required courses are as follows:

- MAT 270 Calculus with Analytic Geometry I MA (4)
- MAT 271 Calculus with Analytic Geometry II MA (4)
- MAT 272 Calculus with Analytic Geometry III MA (4)

Choose between the course combinations below:

- PHY 150 Physics I SQ (4)
- PHY 151 Physics II SQ (4)

- or -

- PHY 121 University Physics I: Mechanics SQ (3)

**GRADUATE PROGRAMS**

The faculty in the department offer programs leading to degrees of Master of Natural Science, MS, and PhD. See the Graduate Catalog for requirements.

**ASTRONOMY (AST)**

For more AST courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

**MAST 111 Introduction to Solar Systems Astronomy, (3)**

- Fall: History, properties of light, instruments, study of solar system and nearby stars. For nonscience majors. Optional lab (MAST 111).
- General Studies: SQ (if credit also earned in MAST 113)

**MAST 112 Introduction to Stars, Galaxies, and Cosmology, (3)**

- Spring: Structure and evolution of stars, star clusters, galaxies, cosmology. For nonscience majors. Optional lab (MAST 114).
- General Studies: SQ (if credit also earned in MAST 114)

**MAST 113 Astronomy Laboratory I, (1)**

- Fall: Astronomical observations and experiments designed to increase familiarity with the sky, telescopes, and astronomical measurements. 2.5 hours lab. Fee. Pre- or corequisites: MAST 111 (or 321); a working knowledge of high school algebra and geometry.
- General Studies: SQ (if credit also earned in MAST 111 or 321)

**MAST 114 Astronomy Laboratory II, (1)**

- Spring: Similar to MAST 113, but material chosen to supplement MAST 112 and 322, 2.5 hours lab. Fee. Pre- or corequisites: MAST 112 (or 322); a working knowledge of high school algebra and geometry.
- General Studies: SQ (if credit also earned in MAST 112 or 322)

**MAST 321 Introduction to Planetary and Stellar Astrophysics, (3)**

- Fall: Physical laws; celestial mechanics; properties of planets, the sun, and other stars; formation and evolution of stars and planetary systems. Prerequisites: MAST 270 (or 290); PHY 150.
- General Studies: SQ (if credit also earned in MAST 113)
DEPARTMENT OF PHYSICS AND ASTRONOMY

M AST 322 Introduction to Galactic and Extragalactic Astrophysics. (3) spring
Evolved stars, introduction to relativity, galaxies and interstellar matter, structure and dynamics of galaxies, cosmology. Prerequisite: AST 321 or instructor approval.
General Studies: SQ (if credit also earned in AST 114)

M AST 421 Astrophysics I. (3) fall
Selected astrophysical topics, including stellar evolution, star formation, interstellar medium, galactic structure, extragalactic astronomy, high-energy astrophysics, and cosmology. Prerequisites: AST 321, 322; PHY 311, 314.

M AST 422 Astrophysics II. (3) spring
Same range of astrophysical topics as for AST 421 but different specific topics are emphasized in a given year. Prerequisites: AST 321, 322; PHY 311, 314.

M AST 460 Astrobiology. (3) fall and spring
Origin, early evolution, distribution, and future of life on Earth and elsewhere in the cosmos. May be repeated for credit. Lecture, discussion, video conferences, possible field trips. Cross-listed as BIO 460/CHM 483/GLG 460/MIC 475. Credit is allowed for only AST 460 or BIO 460 or CHM 483 or GLG 460 or MIC 475. Prerequisite: instructor approval.

M AST 499 Individualized Instruction. (3) selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

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

PHYSICAL SCIENCES (PHS)

M PHS 110 Fundamentals of Physical Science. (4) fall and spring
One-semester survey of the principles of physics and chemistry. Presumes understanding of elementary algebra. 3 hours lecture, 2 hours lab. Fee.
General Studies: SQ

M PHS 208 Patterns in Nature. (4) fall and spring
Project-oriented science course with computer training to develop critical thinking and technical skills for student-oriented K–12 science lessons. Lecture, lab. Cross-listed as MSE 208. Credit is allowed for only MSE 208 or PHS 208. Fee. Prerequisite: a college-level science course or instructor approval.
General Studies: SQ

M PHS 402 Service Learning. (3) fall and spring
K–12 tutoring and mentoring internship related to academic course work in physical science and physics. Requires weekly reflective reading and writing. May be repeated for credit. Internship. Fee. Prerequisite: only PHS 110 (or 208) or PHY 101 (or 105) or both PHY 111 and 113 or both PHY 121 and 122 or only PHY 150.
General Studies: C

M PHS 484 Internship. (1–12) selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.

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

PHYSICS (PHY)

For more PHY courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M PHY 101 Introduction to Physics. (4) fall and spring
Emphasizes applications of physics to life in the modern world. Presumes understanding of elementary algebra. 3 hours lecture, 1 recitation. Prerequisites: algebra and trigonometry.

M PHY 105 Basic Physics. (3) fall
One-semester survey of the principles of physics. Primarily for students who intend to take PHY 121, 131 but have not taken high school physics. 3 hours lecture, 1 recitation. Prerequisites: algebra and trigonometry.

M PHY 111 General Physics. (3) fall, spring, summer
Noncalculus treatment of the principles of physics for nonphysics majors. Students whose curricula require a laboratory course must also register for PHY 113. 3 hours lecture, 1 recitation. Prerequisite: trigonometry.
General Studies: SQ (if credit also earned in PHY 113)

M PHY 112 General Physics. (3) fall, spring, summer
Continuation of PHY 111. Students whose curricula require a laboratory course must also register for PHY 114. Prerequisite: PHY 111.
General Studies: SQ (if credit also earned in PHY 114)

M PHY 113 General Physics Laboratory. (1) fall, spring, summer
Elementary experiments in physics. Requires outside preparation for experiments and report writing. May be taken concurrently with, or subsequent to, PHY 111. 2 hours lab. Fee.
General Studies: SQ (if credit also earned in PHY 111)

M PHY 114 General Physics Laboratory. (1) fall, spring, summer
See PHY 113. May be taken concurrently with, or subsequent to, PHY 112. Fee.
General Studies: SQ (if credit also earned in PHY 112)

M PHY 121 University Physics I: Mechanics. (3) fall, spring, summer
Kinematics; Newton’s laws; work, energy, momentum, conservation laws; dynamics of particles, solids, and fluids. 3 hours lecture, 1 hour recitation. Prerequisite: MAT 270 or 290 or instructor approval.
General Studies: SQ (if credit also earned in PHY 122)

M PHY 122 University Physics Laboratory I. (1) fall, spring, summer
Lab accompanying PHY 121. Fee. Pre- or corequisite: PHY 121.
General Studies: SQ (if credit also earned in PHY 121)

M PHY 131 University Physics II: Electricity and Magnetism. (3) fall, spring, summer
Electric charge and current, electric and magnetic fields in vacuum and in materials, and induction. AC circuits, displacement current, and electromagnetic waves. 3 hours lecture, 1 hour recitation.
Prerequisites: MAT 271 (or 291 or instructor approval); PHY 121.
Corequisite: MAT 272 or instructor approval.
General Studies: SQ (if credit also earned in PHY 132)

M PHY 132 University Physics Laboratory II. (1) spring and summer
Lab accompanying PHY 131. Fee. Pre- or corequisite: PHY 131.
General Studies: SQ (if credit also earned in PHY 131)

M PHY 150 Physics I. (4) spring
Introductory physics for majors. Kinematics, Newton’s Laws, basic forces, energy, momentum, special relativity. 3 hours lecture, 3 hours lab. Fee. Prerequisite: MAT 270 or 290 (or its equivalent).
General Studies: SQ

M PHY 151 Physics II. (4)  
Continuation of PHY 150. Electromagnetic fields; Ampere's and Faraday's Laws; Maxwell's equations; basic circuit elements. 3 hours lecture, 3 hours lab. Fee. Prerequisites: MAT 271 (or 291 or its equivalent); PHY 121, 122 (or 150).

M PHY 190 Seminar: Physics as a Curriculum and a Profession. (1)  

M PHY 201 Mathematical Methods in Physics I. (3)  
Differential equations, linear equations, vectors, matrices, Fourier series, and numerical methods. 2 hours lecture, 2 hours lab. Fee. Prerequisites: MAT 272; Physics major. Corequisite: PHY 252.

M PHY 241 University Physics III. (3)  
Thermodynamics, kinetic theory, physical and wave optics, relativity, photons, matter waves, atomic physics, 3 hours lecture, 1 hour recitation. Prerequisites: PHY 151; nonmajor.

M PHY 252 Physics III. (4)  
Continuation of PHY 151. Wave physics, oscillations, harmonic systems, physical optics, thermodynamics, kinetic theory, 3 hours lecture, 3 hours lab. Fee. Prerequisites: MAT 272 (or its equivalent); PHY 131 and 132 (or 151 or its equivalent). Corequisite: PHY 201.

M PHY 302 Mathematical Methods in Physics II. (2)  
Continuation of PHY 201. Vector calculus, complex variables, partial differential equations, special functions, numerical methods. 1 hour lecture, 3 hours lab. Fee. Prerequisite: PHY 201 (or its equivalent).

M PHY 310 ClassicalParticles, Fields, and Matter I. (3)  
Particle kinematics, mechanics, conservation laws, particle motion in force fields, dynamics of two-body systems, reference frames, rigid body motion, relativity. Fee. Corequisites: both PHY 302 and 314 or only instructor approval.

M PHY 311 ClassicalParticles, Fields, and Matter II. (3)  
Electrostatic and gravitational fields, Poisson and Laplace equations, dielectric materials, magnetic fields and materials, magnetic induction, Faraday's Law. Fee. Prerequisites: PHY 302, 310. Corequisite: PHY 315 or instructor approval.

M PHY 314 QuantumPhysics I. (3)  
Photons, models of the atom, wave properties of matter, introduction to wave mechanics, 1-D systems in quantum mechanics. Fee. Prerequisites: PHY 201 and 252 (or their equivalents). Corequisites: both PHY 302 and 310 or only instructor approval.

M PHY 315 QuantumPhysics II. (3)  
Basic principles of quantum mechanics, 3-D problems, approximation methods, spin, introduction to many-particle systems. Fee. Prerequisites: PHY 302, 310, 314. Corequisite: PHY 311 or instructor approval.

M PHY 333 Electronic Circuits and Measurements. (3)  
Basic principles of electronic circuit analysis and measurement techniques using modern instrumentation and computer-aided analysis of data. 1 hour lecture, 3 hours lab; required equivalent effort outside of lab. Fee. Corequisite: PHY 201 or instructor approval.

M PHY 334 Advanced Laboratory I. (2)  
Selected experiments from contemporary physics. Emphasizes modern instrumentation, computer-assisted acquisition and analysis of data, and report form writing. Lecture, lab. Fee. Prerequisites: PHY 310, 314, 333. Corequisites: both PHY 302 and 314 or only instructor approval.

M PHY 462 Subatomic Physics. (3)  
Nuclear properties, models, decays and reactions; fundamental forces, field theories, symmetry principles; hadrons, quarks, and leptons; the Standard Model. Prerequisites: PHY 311, 315.

M PHY 480 Methods of Teaching Physics. (3)  
Evaluation of various approaches to the teaching of high school physics. Preparation of demonstrations and experiments. Organization of a laboratory. Designed for secondary school physics teachers. Prerequisite: instructor approval.

M PHY 482 Materials Physics I. (3)  
Basic principles of materials physics; crystal structure, diffraction, elasticity, point defects, dislocations, lattice vibrations, thermal properties, periodic potential, band structure. Credit is allowed for only PHY 482 or 512. Prerequisites: PHY 311, 315.

M PHY 482 Materials Physics II. (3)  
Electronic behavior of materials: energy bands, electronic properties, metals, semiconductors, insulators, optical properties, magnetic properties, superconductivity, biophysics. Credit is allowed for only PHY 482 or 512. Prerequisites: PHY 481 or its equivalent.

M PHY 484 Internship: Physics Teaching. (1–4)  
Preparation for high school physics teaching. Student works closely with a faculty member in the elementary physics program. May be repeated for a total of 6 semester hours. Prerequisite: instructor approval.
M PHY 495 Project Research. (1–3)
fall and spring
Supervised project in physics or astrophysics. May be repeated for credit. Prerequisite: instructor approval.

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

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

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

Department of Political Science
www.asu.edu/clas/polisci
480/965-6551
COOR 6801

Patrick J. Kenney, Chair

Professors: Artibise, Ball, Dagger, Fridkin, Guston, Iheuduru, Jones, Kenney, Simon, Youngblood

Associate Professors: Ashley, Crittenden, Dantico, Doty, M. Elman, Herrera, Keating, Mitchell, Simhony, Warner

Assistant Professors: Chin, C. Elman, Espino, Goren, Hindman, Hoekstra, Kittilson, Lewis, Pantoja, Schatzman

POLITICAL SCIENCE—BA

The BA degree in Political Science consists of 42 semester hours, of which 30 must be in political science and 12 in related fields consisting of courses selected from the Departments of Aerospace Studies, Chicana and Chicano Studies, Economics, Family and Human Development, Geography, History, Military Science, Philosophy, Psychology, Religious Studies, and Sociology; the Schools of Global Studies, Human Communication, Human Evolution and Social Change, and Justice and Social Inquiry; or from the African and African American Studies, American Indian Studies, Asian Pacific American Studies, or Women and Gender Studies programs. At least 21 hours in political science must be in upper-division courses.

The following courses are required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POS 101</td>
<td>Political Ideologies SB</td>
<td>3</td>
</tr>
<tr>
<td>POS 110</td>
<td>Government and Politics SB</td>
<td>3</td>
</tr>
<tr>
<td>or POS 310 American National Government SB</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>POS 150</td>
<td>Comparative Government SB, G</td>
<td>3</td>
</tr>
<tr>
<td>or POS 160 Global Politics SB, G</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>POS 301</td>
<td>Empirical Political Inquiry SB</td>
<td>3</td>
</tr>
<tr>
<td>POS 401</td>
<td>Political Statistics CS</td>
<td>3</td>
</tr>
</tbody>
</table>

Total ...............................................................................................15

Students who major in Political Science must have a minimum GPA of 2.00 for all courses that count toward the major. Courses that count toward the major must have a grade of “C” (2.00) or higher. See “College Graduation Requirements,” page 503. No more than six hours of POS 484 Internship may be applied to the major.

CERTIFICATES

Asian Studies Certificate or Emphasis. Students majoring in Political Science may elect to pursue an Asian Studies Certificate combining courses from the major with selected outside courses of wholly Asian content. See “Asian Studies,” page 509, for more information.

Certificate in Civic Education. The Civic Education Certificate is designed to contribute to the preparation of undergraduate students for

1. careers in primary and secondary education (where the teaching of government and civics may be involved);
2. careers or voluntary participation in politics, public service, and civic and social movements; and
3. further education in law, journalism, business, history, sociology, political science, and other fields where an understanding of questions of citizenship, leadership, community, democracy, public responsibility, and ethics is crucial.


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The certificate does not substitute for degree requirements in any subject, including Political Science; rather, as a complement to the student’s chosen major, the certificate program is intended to guide students to a variety of courses whose successful completion indicates their special accomplishment in the area of civic education.

Students majoring in any subject at the university may be awarded the Civic Education Certificate upon completion of the following 15 semester hours of political science courses:

- POS 101 Political Ideologies SB, 3
- POS 110 Government and Politics SB, 3
- POS 150 Comparative Government SB, G, 3
- POS 160 Global Politics SB, G, 3
- POS 270 American Legal System SB, 3
- POS 300 Contemporary Controversies in Global Politics SB, G, 3
- POS 313 The Congress SB, 3
- POS 314 The American Presidency SB, 3
- POS 315 The Supreme Court SB, 3
- POS 330 Contemporary Controversies in Domestic Politics SB, 3
- POS 332 American Political Parties SB, 3
- POS 333 Interest Groups SB, 3
- POS 370 Law and Society SB, 3
- POS 417 The Arizona Political System SB, 3
- POS 435 Women and Politics SB, C, 3
- POS 439 Minority Group Politics in America SB, C, 3

Total: 15 semester hours

Certificate students must have a minimum GPA of 2.00; only courses in which students have a grade of “C” (2.00) or higher count toward the certificate.

Certificate in International Studies. The International Studies Certificate is designed to prepare students for careers in government agencies, international governmental and nongovernmental organizations, multinational firms and banks, and for graduate studies in International Relations or Political Science. The certificate is not a substitute for degree requirements in any subject, including political science; rather, the required courses add an international and comparative dimension to the student’s chosen major. Requirements for the certificate are intended to provide an understanding of international relations and comparative government, an awareness of global social and political-economic processes, and sensitivity to foreign political systems and cultures. These objectives are met by a sequence of political science courses in the areas of international relations, comparative politics, and area studies.

Students majoring in any subject at the university may be awarded the International Studies Certificate upon completion of the following 15 semester hours of political science courses:

Choose one from the courses below: 3
- POS 101 Political Ideologies SB
- POS 110 Government and Politics SB
- POS 150 Comparative Government SB, G
- POS 160 Global Politics SB, G
- POS 270 American Legal System SB
- POS 300 Contemporary Controversies in Global Politics SB, G
- POS 313 The Congress SB
- POS 314 The American Presidency SB
- POS 315 The Supreme Court SB
- POS 330 Contemporary Controversies in Domestic Politics SB
- POS 332 American Political Parties SB
- POS 333 Interest Groups SB
- POS 370 Law and Society SB
- POS 417 The Arizona Political System SB
- POS 435 Women and Politics SB, C
- POS 439 Minority Group Politics in America SB, C

Choose two from the courses below: 6
- POS 340 History of Political Philosophy I HU, H, 3
- POS 341 History of Political Philosophy II HU, H, 3
- POS 443 Topics in Contemporary Political Theory HU, 3
- POS 451 China, Japan, and the Koreas SB, G
- POS 452 China SB, G
- POS 453 South America SB, G
- POS 454 Mexico SB, G
- POS 455 Central America and the Caribbean SB, G
- POS 459 African Politics and Society SB, G
- POS 460 World Politics SB, G
- POS 461 American Foreign Policy SB, G
- POS 465 International Organization and Law SB, G
- POS 467 International Security SB, G
- POS 486 International Political Economy SB, G
- POS 488 International Political Economy SB, G
- POS 530 Comparative Politics SB, G
- POS 555 Russia and Successor States SB, G
- POS 560 World Politics SB, G
- POS 561 American Foreign Policy SB, G
- POS 564 National Security, Intelligence, and Terrorism SB
- POS 565 International Organization and Law SB, G
- POS 566 International Security SB, G
- POS 567 International Political Economy SB, G
- POS 568 Comparative Asian Foreign Policies SB, G

Total: 15 semester hours

Honors students who select an international topic for their theses may apply thesis credit toward the 15 hours of international course work for the certificate.

Depending upon their interests, certificate students are strongly advised to take 12 semester hours or more from appropriate courses in anthropology (ASB), economics (ECN), geography (GCU), history (HST), international business studies (IBS), and sociology (SOC). Knowledge of a modern foreign language equivalent to at least two years of college study is strongly recommended.

Certificate students must have a minimum GPA of 2.00; only courses in which students have a grade of “C” (2.00) or higher count toward the certificate.

Latin American Studies Certificate or Emphasis. Students majoring in Political Science may elect to pursue a Latin American Studies Certificate combining courses from the major with selected outside courses of wholly Latin American content. See “Latin American Studies,” page 512, for more information.

MINOR IN POLITICAL SCIENCE

The minor in Political Science consists of 18 semester hours in political science courses, 12 hours of which must be upper-division courses. Students who minor in Political Science must have two courses from among the following:

Choose one from the courses below: 3
- POS 101 Political Ideologies SB
- POS 110 Government and Politics SB, 3
- POS 150 Comparative Government SB, G
- POS 160 Global Politics SB, G
- POS 270 American Legal System SB
- POS 300 Contemporary Controversies in Global Politics SB, G
- POS 313 The Congress SB
- POS 314 The American Presidency SB
- POS 315 The Supreme Court SB
- POS 330 Contemporary Controversies in Domestic Politics SB
- POS 332 American Political Parties SB
- POS 333 Interest Groups SB
- POS 370 Law and Society SB
- POS 417 The Arizona Political System SB
- POS 435 Women and Politics SB, C
- POS 439 Minority Group Politics in America SB, C

Choose two from the courses below: 6
- POS 340 History of Political Philosophy I HU, H
- POS 341 History of Political Philosophy II HU, H
- POS 443 Topics in Contemporary Political Theory HU
- POS 451 China, Japan, and the Koreas SB, G
- POS 452 China SB, G
- POS 453 South America SB, G
- POS 454 Mexico SB, G
- POS 455 Central America and the Caribbean SB, G
- POS 459 African Politics and Society SB, G
- POS 460 World Politics SB, G
- POS 461 American Foreign Policy SB, G
- POS 465 International Organization and Law SB, G
- POS 467 International Security SB, G
- POS 486 International Political Economy SB, G
- POS 488 International Political Economy SB, G
- POS 530 Comparative Politics SB, G
- POS 555 Russia and Successor States SB, G
- POS 560 World Politics SB, G
- POS 561 American Foreign Policy SB, G
- POS 564 National Security, Intelligence, and Terrorism SB
- POS 565 International Organization and Law SB, G
- POS 566 International Security SB, G
- POS 567 International Political Economy SB, G
- POS 568 Comparative Asian Foreign Policies SB, G

Total: 15 semester hours

Students who minor in Political Science must have a minimum GPA of 2.00 for all courses that count toward the minor. Courses that count toward the minor must have a grade of “C” (2.00) or higher; no more than one “D” (1.00)
grade in a lower-division course may be counted toward the minor. No more than three hours of POS 484 Internship and three hours of POS 499 Individualized Instruction may be applied to the minor.

**BIS CONCENTRATIONS**

Concentrations in political science (with civic education, and international studies options) are available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

**SECONDARY EDUCATION—BAE**

This degree is offered through the Initial Teacher Certification (ITC) program in the College of Education. Students pursuing a major in Secondary Education with an academic specialization in political science have an advisor in the College of Education and an advisor within the Department of Political Science.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

**Academic Specialization ITC Admission Requirements**

At least four required courses in the academic specialization must be completed with a grade of “C” (2.00) or higher before applying to the ITC professional program.

**Political Science.** The major teaching field consists of 41 to 42 semester hours and six hours in teaching methods. A minimum grade of “C” (2.00) is required in all academic specialization courses. Required major courses are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POS 101 Political Ideologies SB</td>
<td>3</td>
</tr>
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<td>POS 110 Government and Politics SB</td>
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</tr>
<tr>
<td>POS 301 Empirical Political Inquiry SB</td>
<td>3</td>
</tr>
<tr>
<td>POS 311 Arizona Constitution and Government</td>
<td></td>
</tr>
<tr>
<td>or POS 417 The Arizona Political System SB</td>
<td></td>
</tr>
<tr>
<td>Electives(^1)</td>
<td>15</td>
</tr>
<tr>
<td>Related area(^1)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>41-42</td>
</tr>
</tbody>
</table>

\(^1\) Six hours must be in the upper division.

\(^2\) Choose courses in consultation with a department advisor.

Students are required to complete two methods courses, one of which is SED 480 Methods of Teaching Social Studies. For the second methods course, students select from the following:

- GCU 414 Teaching Geography Standards
- GCU 494 ST: Geography in the K–12 Classroom
- HST 480 Methods of Teaching History: Classroom Resources
- HST 481 Methods of Teaching History: Community Resources

Courses may be substituted for POS 417 with departmental approval.

**Social Studies.** This degree is offered through the Initial Teacher Certification program in the College of Education. Students pursuing a major in Secondary Education have an advisor in the College of Education and an advisor within the department of their academic specialization area.

See “College of Education,” page 349, for information on admission eligibility requirements, admission deadlines, field experiences, and student teaching. For more information, or to schedule an appointment with an advisor, call the Office of Student Services in the College of Education at 480/965-5555.

**JOINT BACHELOR/MASTER’S PROGRAM**

**Admission.** Any undergraduate Political Science major with a GPA of 3.40 or higher, who has accumulated at least 90 hours toward the undergraduate degree, or who is on the verge of doing so, and who has taken at least one 400-level political science course at ASU can be considered for admission into the joint program.

The following items should be submitted to the director of graduate studies of the Department of Political Science by April 15 in order to ensure recommendation for admission to the five-year program beginning the following fall:

1. the department’s graduate application, available in the department’s graduate office or online;
2. a statement of purpose that describes the applicant’s educational objectives and identifies a faculty member who will serve as an advisor;
3. an official transcript;
4. a writing sample that best represents the applicant’s analytical and writing skills; and
5. three letters of recommendation, two of which must be written by members of the political science faculty.

Students applying to the five-year program do not need to take the Graduate Record Exam.

**Note:** Students must also apply for admission to the Division of Graduate Studies at the same time they submit materials to the director of graduate studies of the department.

**Program of Study.** The Division of Graduate Studies has approved a plan whereby undergraduates can “share” credits for both their undergraduate and graduate degrees. Students can count one 400-level course and two 500-level courses as credit hours for both degrees. Using this system of shared credits, undergraduates will be able to complete both degrees in five years.

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\(^L\) literacy and critical inquiry / \(^M\)A mathematics / \(^C\)S computer/statistics/quantitative applications / \(^H\)U humanities and fine arts / \(^S\)B social and behavioral sciences / \(^S\)G natural science—general core courses / \(^S\)G natural science—quantitative / \(^C\)C cultural diversity in the United States / \(^G\)G global / \(^H\)H historical / See “General Studies,” page 93.
Once all existing degree requirements for the undergraduate degree have been completed, students will have completed enough courses to be able to finish their master’s degree in one academic year. Students are only eligible for research or teaching assistantships, health insurance, financial aid, or graduate awards once they have completed all requirements for the undergraduate degree and the undergraduate degree has been posted.

A minimum of 30 semester hours is required for the Master of Arts degree. All candidates must take POS 503 and the core courses in the student’s major and minor fields. Additional hours must be taken in graduate-level courses and seminars. Each student is expected to take seminars each semester in his/her major field, minor field, and an elective until course work is completed. If the thesis option is followed, the program must include a combination of at least six semester hours of research (POS 592) and thesis (POS 599) credit. A maximum of six semester hours in approved courses taken outside of the department or six hours of reading and conference (POS 590) courses may count toward the 30-semester-hour requirement.

**Foreign Language Requirement.** None.

**Thesis Option Requirement.** MA students seeking admission to the PhD program are expected to complete the thesis early in their fourth semester. A copy of the *Format Manual* is available in the Division of Graduate Studies. A careful review of this document well in advance of preparation for the final copy of the thesis is recommended. An oral examination in defense of the thesis is required.

**Non-Thesis Option Requirements.** The program of study must include 27 semester hours of approved course work and at least one three-hour reading and conference course (POS 590) during the fourth semester to enhance the student’s research capabilities. A research paper must be defended by the end of the third semester before a faculty committee appointed by the director of graduate studies.

**GRADUATE PROGRAMS**

The faculty in the Department of Political Science offer programs leading to the MA and PhD degrees. See the *Graduate Catalog* for requirements.

**POLITICAL SCIENCE (POS)**

**M POS 101 Political Ideologies.** (3)  
Leading political ideas and belief systems, e.g., Marxism, liberalism, conservatism, theories of democracy, and alternative futures.  
*General Studies: SB*

**M POS 110 Government and Politics.** (3)  
Major institutions of modern government and processes of individual and group political activity, with emphasis on the American experience. Meets the federal government requirement for teacher certification. Credit is allowed for only POS 110 or 310.  
*General Studies: SB*

**M POS 150 Comparative Government.** (3)  
Political institutions and processes in selected foreign countries, including origins, strengths, and weaknesses of contemporary political systems and political development.  
*General Studies: SB, G*

**M POS 160 Global Politics.** (3)  
Nature of contemporary world politics through the study of both general theoretical topics and specific geographical areas.  
*General Studies: SB, G*

**M POS 220 Political Issues and Public Policy.** (3)  
Contemporary social problems and political issues, particularly development of public policy.  
*Prerequisite: ENG 101 or 105. General Studies: L/SB*

**M POS 230 Current Issues in National Politics.** (3)  
Major issues facing national governments in the domestic field.  
*Prerequisite: ENG 101 or 105. General Studies: L/SB*

**M POS 240 Introduction to Southeast Asia.** (3)  
Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia. Cross-listed as ASB 240/GCU 240/HST 240/REL 240. Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240.  
*General Studies: HU/SB, G*

**M POS 260 Current Issues in International Politics.** (3)  
Analyzes major current problems in world politics. Prerequisite: ENG 101 or 105.  
*General Studies: L/SB, G*
M POS 270 American Legal System. (3)  
fall and spring  
Concepts, institutions, classifications, and functions of law. Role of the courts and impact of judicial decision making on social change.  
General Studies: SB

M POS 300 Contemporary Controversies in Global Politics. (3)  
fall and spring  
Explores key controversies in global politics, including security, economic stability, poverty, gender, race, and the environment.  
General Studies: SB, G

M POS 301 Empirical Political Inquiry. (3)  
fall and spring  
Logic of political inquiry, including research problems, concepts, hypotheses, theories, measurement, data collection, and analysis.  
General Studies: SB

M POS 305 Politics and Film. (3)  
once a year  
Examines portrayal of political events, ethnic groups, and sociopolitical situations in film, a major medium addressing questions of human values. May be repeated for credit when topics vary. Lecture, film, discussion.  
General Studies: SB

M POS 310 American National Government. (3)  
fall and spring  
Powers, functions, and agents of American political institutions. Meets the federal government requirement for teacher certification. Credit is allowed for only POS 310 or 110.  
General Studies: SB

M POS 311 Arizona Constitution and Government. (2)  
fall and spring  
Constitution and government of the State of Arizona. Credit is allowed for only POS 311 or 316 or 417. Meets the Arizona constitution requirement for teacher certification. May not be counted for the major or a teaching major or minor in Political Science.  
M POS 313 The Congress. (3)  
once a year  
Lawmaking process in the U.S. Congress.  
General Studies: SB

M POS 314 The American Presidency. (3)  
once a year  
Office, role, and power of the American presidency in the American political system.  
General Studies: SB

M POS 315 The Supreme Court. (3)  
once a year  
Role of the Supreme Court in American society and politics; examines decision-making process and impact of decisions; restraint versus activism.  
General Studies: SB

M POS 316 State and Local Government. (3)  
once a year  
Survey of the operations, problems, and policies of state and local governments in the United States. Credit is allowed for only POS 316 or 311.  
General Studies: SB

M POS 320 Public Administration. (3)  
once a year  
Role of the administrator in the political process with an examination of the basic concepts of bureaucracy.  
General Studies: SB

M POS 325 Public Policy Development. (3)  
once a year  
Examines one or more aspects of public policy development, including agenda setting and policy formulation, implementation, and analysis.  
General Studies: SB

M POS 330 Contemporary Controversies in Domestic Politics. (3)  
fall and spring  
Explores key controversies in domestic politics, including the environment, the economy, poverty, gender, race, and security.  
General Studies: SB

M POS 331 Public Opinion. (3)  
once a year  
Formation, expression, and influence of individual and organized opinion on political institutions.  
General Studies: SB

M POS 332 American Political Parties. (3)  
once a year  
Development of the American party system. Party organization and functions.  
General Studies: SB

M POS 333 Interest Groups. (3)  
once a year  
Examines how minority, corporate, labor, farm, consumer, environmental, health, education and public interest groups, and single-issue movements influence government.  
General Studies: SB

M POS 336 Voters in America. (3)  
once a year  
Voting behavior and the attitudes, perceptions, and activities of the citizenry in the political process.  
General Studies: SB

M POS 340 History of Political Philosophy I. (3)  
once a year  
Western political philosophers and their theories to the 17th century.  
General Studies: HU, H

M POS 341 History of Political Philosophy II. (3)  
once a year  
Western political philosophers and their theories from the 17th to the 20th centuries.  
General Studies: HU, H

M POS 346 Problems of Democracy. (3)  
once a year  
Issues and problems in democratic theory, e.g., the nature of democracy, majority rule, representation, equality, and the value of political participation.  
General Studies: HU

M POS 350 Comparative Politics. (3)  
once a year  
Theoretical approaches and political institutions, such as parties, pressure groups, legislatures, and executives, from a cross-national perspective.  
General Studies: SB, G

M POS 351 Democratization. (3)  
fall  
Examines the consolidation of democracies in postauthoritarian and postcommunist settings (e.g., Latin America, Eastern Europe, Asia).  
General Studies: SB, G

M POS 355 Russia and Successor States. (3)  
once a year  
Description and analysis of political institutions and practices in Russia and successor states.  
General Studies: SB, G

M POS 356 European Union. (3)  
once a year  
History and workings of EU member states, including single market, Euro, legal system, ethnonationalism, immigration, expansion, trade wars, and defense.  
General Studies: SB, G

M POS 357 South Asia Politics. (3)  
once a year  
Political culture and systems of South Asia examined through study of political writings, novels, and poetry. Lecture, discussion.  
General Studies: SB, G

M POS 358 Southeast Asia. (3)  
once a year  
Political background, governmental institutions, political dynamics, and developmental problems of Southeast Asian nations.  
General Studies: SB, G


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M POS 359 African Politics and Society. (3)  
selected semesters  
Comparative analysis of socioeconomic forces, political processes, government institutions, and political novels in Sub-Sahara Africa.  
General Studies: SB, G

M POS 360 World Politics. (3)  
once a year  
Theory and practice of statecraft as applied to selected issues, regions, or eras. May be repeated for credit when topics vary.  
General Studies: SB, G

M POS 361 American Foreign Policy. (3)  
United States in world affairs; foreign policy since World War I. Techniques in formulating American foreign policies.  
General Studies: SB, G

M POS 364 National Security, Intelligence, and Terrorism. (3)  
Theoretical and empirical assessment of U.S. national security policy in the post-cold war era.  
General Studies: SB

M POS 366 Ethics and Human Rights. (3)  
Explores issues of ethics, morality, and human rights in the global community. Lecture, discussion.  
M POS 369 War, Politics, and Society. (3)  
these years  
Relationships between techniques/technology of war and political/social structures in different time periods and locations. Who commands, dies, and pays?  
M POS 370 Law and Society. (3)  
once a year  
Analyzes debates among social scientists and legal theorists concerning the relationship between "law" and "society."  
M POS 401 Political Statistics. (3)  
tail and spring  
Basic concepts in statistics as they facilitate the description, explanation, and prediction of social and political phenomena. Prerequisite: POS 301 (or its equivalent) or instructor approval.  
General Studies: CS

M POS 410 Governing American Cities. (3)  
once a year  
Reviews modern urban problems, their sources, and potential solutions, including structural and policy alternatives.  
General Studies: SB

M POS 417 The Arizona Political System. (3)  
selected semesters  
Contemporary political problems within the context of Arizona's constitutional, political, and social frameworks. Meets the Arizona Constitution requirement for teacher certification. Credit is allowed for only POS 417 or 311.  
General Studies: SB

M POS 426 Elements of Public Policy. (3)  
once a year  
Each section may cover one of the following topics: consumer protection, natural resources, criminal justice, environmental protection, science and technology, or theories of public policy. May be repeated for credit when topics vary.  
General Studies: SB

M POS 431 Campaigns and Elections. (3)  
once a year  
Examines campaigns from a multitude of perspectives, including the politician, reporter, campaign strategist, and voter. Lecture, discussion.  
General Studies: SB

M POS 432 Money and Politics. (3)  
once a year  
Role of money and special interests in elections, campaign politics, and public policy-making in American politics. Lecture, discussion.  
General Studies: SB

M POS 433 Media and Politics. (3)  
once a year  
Studies mass media and politics in the United States, e.g., media and elections, media and government. Lecture, discussion.  
General Studies: SB

M POS 435 Women and Politics. (3)  
selected semesters  
Focuses on the uniqueness of women in modern political systems and political thought. Emphasis may vary with instructor.  
General Studies: SB, C

M POS 439 Minority Group Politics in America. (3)  
Role of minority groups in American politics.  
General Studies: SB, C

M POS 442 American Political Thought. (3)  
once a year  
Analyzes debates among social scientists and legal theorists concerning the relationship between "law" and "society."  
M POS 444 Asian Political Thought. (3)  
once a year  
Major problems and theories in contemporary political thought.  
General Studies: HU

M POS 445 Inter-American Relations. (3)  
once a year  
Diplomatic relations among the Latin American states. Development of U.S. foreign policy toward Latin America.  
General Studies: SB, G

M POS 451 China, Japan, and the Koreans. (3)  
once a year  
Comparative analysis of the political modernization experiences of China, Japan, and the two Koreas, focusing on their differing reactions to the West.  
General Studies: SB, G

M POS 452 China. (3)  
once a year  
Background of the Communist revolution, political processes, and developmental problems in China from a comparative perspective.  
General Studies: SB, G

M POS 453 South America. (3)  
once a year  
Political institutions, process, and developmental problems of South American states examined through comparative analysis, novels, and poetry.  
General Studies: SB, G

M POS 454 Mexico. (3)  
once a year  
Mexican federal, state, and local governmental institutions.  
General Studies: SB, G

M POS 455 Central America and the Caribbean. (3)  
once a year  
Governmental institutions, political processes, and developmental problems of the nation-states and dependent areas of Central America and the Caribbean.  
General Studies: SB, G

M POS 459 South and Southern Africa. (3)  
once a year  
Post-apartheid South African government and politics; South Africa and the southern African region; regional security and development.  
General Studies: SB, G

M POS 463 Inter-American Relations. (3)  
once a year  
Diplomatic relations among the Latin American states. Development of U.S. foreign policy toward Latin America.  
General Studies: SB, G

M POS 465 International Organization and Law. (3)  
once a year  
History, practical political significance, and future of international institutions, transnational regimes, and international law.  
General Studies: SB, G
M POS 467 International Security. (3)
    once a year
Examines issues affecting the international security of states and peoples, e.g., military, economic, technological, environmental, and demographic.
    General Studies: SB, G
M POS 468 Comparative Asian Foreign Policies. (3)
    once a year
Foreign policies of the Asian states, emphasizing their security relations and movements toward regionalism.
    General Studies: SB, G
M POS 471 Constitutional Law I. (3)
    once a year
Development of the U.S. Constitution as reflected in decisions of the Supreme Court; jurisdiction and organization of the federal courts; judicial review; separation of powers; federalism; the commerce clause; national taxing and spending power; state police power.
    General Studies: SB
M POS 472 Constitutional Law II. (3)
    once a year
Development of the U.S. Constitution as reflected in decisions of the Supreme Court; due process; equal protection of laws; individual rights; civil liberties.
    General Studies: SB
M POS 484 Internship. (1–12)
    selected semesters
M POS 485 Political Economy. (3)
    once a year
Problems, policies, and possibilities of various political-economic systems and the interrelationship of capitalism, socialism, and democracy.
    General Studies: SB
M POS 486 International Political Economy. (3)
    once a year
Contending approaches to historical and contemporary issues of international political economy, including global welfare, equality, ecology, and peace.
    General Studies: SB
M POS 498 Pro-Seminar. (3)
    once a year
Small group study and research for advanced students within their major area. Prerequisite: major in the department or instructor approval.
    General Studies: L
M POS 499 Individualized Instruction. (3)
    selected semesters
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
Graduate-Level Courses. For information about courses numbered from 500 to 799, see the Graduate Catalog, or access www.asu.edu/aad/catalogs on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.
MINOR IN PSYCHOLOGY

The minor in Psychology consists of completing the 22 semester hours of course work in the foundations of psychology and the breadth categories described above. Students with an appropriate equivalent course may exclude PSY 230 from the requirements but need an additional three hours in psychology to equal the 22 hours minimum. All courses must be passed with a minimum grade of “C” (2.00).

BIS CONCENTRATION

A concentration in psychology is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

GRADUATE PROGRAMS

The faculty in the Department of Psychology offer a program leading to the PhD degree. See the Graduate Catalog for requirements.

PSYCHOLOGY (SOCIAL AND BEHAVIORAL) (PGS)

For more PGS courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M PGS 101 Introduction to Psychology. (3)
fall, spring, summer
Major areas of theory and research in psychology. Requires participation in department-sponsored research or an educationally equivalent alternative activity.
General Studies: SB

M PGS 194 Special Topics. (1–4)
selected semesters

M PGS 222 Human Sexual Behavior. (3)
fall and spring
Patterns of sexual behavior, including variations and deviations; theories of sexual attraction, sex differences, and sexual dysfunction and treatment. Prerequisite: PGS 101.
General Studies: SB

M PGS 270 Psychology of Adjustment. (3)
fall, spring, summer
Principles of mental health, adjustment, conflict, stress, and coping processes derived from clinical and experimental research. Intended for nonmajors; cannot be used for major credit. Prerequisite: PGS 101.
General Studies: SB

M PGS 306 Environmental Psychology. (3)
fall, spring, summer
Concepts and research strategies in the study of behavior in interaction with physical environment. Prerequisite: PGS 101.
General Studies: SB

M PGS 315 Personality Theory and Research. (3)
fall, spring, summer
Definition and description of personality in terms of theoretical and methodological approaches. Prerequisites: PGS 101; PSY 290.
General Studies: SB

Cognitive/Learning: PSY 320, 323, 324
Developmental: PGS 341
Personality/Mental Health: PGS 315, 466
Social: PGS 306, 350, 351

III. Depth (six semester hours)

Two additional courses from one of the clusters used to meet the breadth requirements. At least one of the courses must be at the 400 level.
Biological: PSY 424, 425, 426, 470
Cognitive/Learning: PSY 320, 323, 324, 420, 434, 437
Developmental: PGS 344, 427, 441, 445, 446
Personality/Mental Health: PGS 315, 365, 443, 444, 462, 464, 465, 466, 468, 471, 472
Social: PGS 306, 350 or 351, 430, 451, 452, 458, 461

IV. Additional Psychology Courses (nine semester hours)

Three courses in psychology (two must be in the upper division) excluding PGS 270, 484 and PSY 484. Approved 200-level community college courses may be used in this category. These courses may not be used to also satisfy breadth or depth requirements. Students may count up to six semester hours in PGS or PSY 399 or 499 to satisfy this requirement. Honors students may count up to three semester hours of PSY 492 and three semester hours of PGS 493 (six semester hours total), in lieu of six semester hours of PGS or PSY 399 or 499, to satisfy this requirement.

V. Mathematics Foundation (three semester hours)
MAT 119, 170, 242, 251, or higher than 251.

VI. Foundations of Behavior (nine semester hours)

Any three courses from among the following prefixes: ASB, ASM, BIO, GCU, HPS, PHI, and SOC.
For more information, see “College Graduation Requirements,” page 503.

PSYCHOLOGY—BS

The BS degree in Psychology is focused on the science of psychology and is designed specifically for students planning to pursue an advanced degree in psychology or related disciplines. The requirements for the BS degree in Psychology are identical to the requirements for the BA degree with the following three exceptions:

1. PSY 330 must be completed as one of the options in the additional psychology course requirements.
2. At least three semester hours of PSY 390 or PGS or PSY 399 or 499 must be completed as one of the options in the additional psychology course requirements.
3. MAT 251 or higher must be completed for the mathematics foundation requirement.

MINOR IN PSYCHOLOGY

The minor in Psychology consists of completing the 22 semester hours of course work in the foundations of psychology and the breadth categories described above. Students with an appropriate equivalent course may exclude PSY 230 from the requirements but need an additional three hours in psychology to equal the 22 hours minimum. All courses must be passed with a minimum grade of “C” (2.00).
M PGS 341 Developmental Psychology. (3)
fall and spring
Analyzes behavior development in terms of psychological principles. Current research in human development. Prerequisites: PGS 101; PSY 290.
General Studies: SB

M PGS 344 Directed Child Study. (3–4)
fall, spring, summer
Theories and methods of intervention with preschool children and supervised practicum in the Child Study Laboratory. 1 hour lecture, 6–8 hours practicum. Prerequisites: CDE 232 (or ECD 214 or PGS 341); PSY 290.

M PGS 350 Social Psychology. (3)
fall, spring, summer
Human social behavior, including such concepts as aggression, attraction, attribution, conformity, groups, helping, person perception, and persuasion. Prerequisite: PGS 101.
General Studies: SB

M PGS 351 Honors Social Psychology. (3)
selected semesters
Critical analysis of human social behavior for honors students; topics include stereotyping, social influence, attraction, aggression, helping, groups, and attitudes. Open only to students without previous credit for PGS 350. Lecture, discussion. Prerequisites: both PGS 101 and admission to the Barrett Honors College or only instructor approval.
General Studies: L/SB

M PGS 365 Community Psychology. (3)
fall and spring
Mental health and psychological well-being in the community, emphasizing current issues and related research. Prerequisites: PGS 315 (or 350 or 351); PSY 290.
General Studies: SB

M PGS 394 Special Topics. (1–4)
selected semesters

M PGS 399 Supervised Research. (1–3)
fall, spring, summer
Experience within the context of current faculty research projects. Responsibility is assigned depending on qualifications. “Y” grade only. May be repeated for a total of 6 hours. Prerequisites: approval of faculty member before registration; 3.00 GPA in major. Pre- or corequisite: PSY 230 (or its equivalent).
General Studies: L/SB

M PGS 414 History of Psychology. (3)
fall and spring
Historical development of psychology from its philosophical beginnings to the present. Prerequisites: PGS 101; PSY 230, 290.
General Studies: L/SB

M PGS 427 Psychology of Aging. (3)
selected semesters
Analyzes loss, maintenance, and gain associated with cognitive and affective aging. Individual differences in coping with normative life transitions. Prerequisites: PGS 341; PSY 290.
General Studies: L/SB

M PGS 430 Industrial Psychology. (3)
fall, spring, summer
Organizations and management systems; motivation and work performance; human factors in systems design and evaluation; personnel selection and testing. Prerequisite: PSY 290 or instructor approval.

M PGS 441 Cognitive Development. (3)
fall and spring
Experimental and theoretical literature in child development and behavior. Prerequisites: PGS 341; PSY 290.
General Studies: L/SB

M PGS 443 Abnormal Child Psychology. (3)
fall and spring
Covers major disorders of childhood and adolescence (e.g., autism, hyperactivity, phobias, and delinquency), including cause, diagnosis, treatment, and prevention. Prerequisites: PGS 315 (or 341 or 350 or 351); PSY 290.
General Studies: L/SB

M PGS 444 Adolescent Psychology and Psychopathology. (3)
selected semesters
Advanced-level survey of normal adolescent psychological development and psychological disorders of this age period. Lecture, discussion. Prerequisites: PGS 341; PSY 290.
General Studies: L

M PGS 445 Child Language and Drawing. (3)
fall
Language acquisition and developmental changes in drawing, considered in the context of cognitive developmental stages. Children’s representation and communication of knowledge through language and drawing. Prerequisites: PGS 341; PSY 290.
General Studies: SB

M PGS 451 Stereotyping, Prejudice, and Discrimination. (3)
selected semesters
Critical investigation of the processes underlying, and the factors contributing to, stereotyping, prejudice, and discrimination. Lecture, discussion. Prerequisites: PGS 350 (or 351); PSY 290.
General Studies: L

M PGS 452 Applied Social Psychology. (3)
fall
Studies applications of social psychological theory and concepts in natural settings; research design and data analysis. Lecture, lab-type activities. Prerequisites: PGS 350 (or 351); PSY 230, 290.
General Studies: L

M PGS 456 Minority Issues in Psychology. (3)
selected semesters
Discusses theory, research, and issues regarding social development. Example topics: formation of attachments, prosocial development, and gender-role development. Lecture, seminar. Prerequisites: PGS 341; PSY 290.
General Studies: L

M PGS 457 Group Dynamics. (3)
fall
Theories and methods of group leadership, group effectiveness, communication within groups, and relations between groups and individual members. Prerequisites: PGS 350 (or 351); PSY 290.

M PGS 461 Interpersonal Influence. (3)
selected semesters
Principles and procedures that affect the process of social influence; consideration of attitudinal, compliance-inducing, and perceptual influences. Prerequisites: PGS 350 (or 351); PSY 290.

M PGS 462 Health Psychology. (3)
fall and spring
Contributions of psychology to health promotion and illness prevention, adaptation to acute and chronic illness, and to the health care system. Prerequisites: PSY 230, 290.

M PGS 464 Minority Issues in Psychology. (3)
spring
Cultural issues relating to the diversity of human cultural experiences among ethnic minorities in the U.S. Prerequisite: PSY 290.

M PGS 465 Psychology of Stress and Coping. (3)
fall
Readings in theory and research in the area of stress and coping. Lecture, discussion, class presentations. Prerequisites: PGS 315 (or 350 or 351); PSY 230, 290.
General Studies: L

M PGS 466 Abnormal Psychology. (3)
fall, spring, summer
Historical and current definitions, theory, and research concerning abnormal behavior. Major categories of psychopathology, including related treatment approaches. Prerequisites: PGS 101; PSY 290.
General Studies: SB
M PG 467 Psychology of Magical Beliefs. (3)  
selected semesters  
Psychological nature and bases of magical beliefs and their impact on health behaviors, eating practices, and interpersonal relations.  
Lecture, seminar. Prerequisites: PGS 315 (or 466 or PSY 434); PSY 290.  
General Studies: L  
M PSY 468 Psychology and Law. (3)  
fall and spring  
Theories, research, and practice in psychology as related to law, including criminal, civil, domestic relations, and professional issues. Lecture, discussion. Prerequisite: PSY 290.  
M PSY 471 Psychological Testing. (3)  
spring  
Methods and theory of psychological testing; various types of psychological tests; consideration of ethical, social, and legal aspects of testing. Prerequisite: PSY 290.  
M PSY 472 Clinical Psychology. (3)  
fall and spring  
Clinical psychology as a science and profession. Historical development, methods of interviewing, assessment, and therapeutic intervention. Prerequisites: PGS 443 (or 466); PSY 290.  
M PSY 484 Internship. (1–12)  
selected semesters  
M PSY 494 Special Topics. (1–4)  
selected semesters  
M PSY 499 Individualized Instruction. (1–3)  
selected semesters  
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see "Omnibus Courses," page 63.  

**PSYCHOLOGY (SCIENCE AND MATHEMATICS) (PSY)**  
For more PSY courses, see the "Course Prefixes" table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.  
M PSY 230 Introduction to Statistics. (3)  
fall, spring, summer  
Basic concepts in descriptive and inferential statistics, emphasizing applications to psychology. Self-paced (PSI) and lecture sections. Prerequisites: MAT 119 (or 170 or 242 or 251) or any MAT course higher than MAT 251; PGS 101.  
General Studies: L  
M PSY 280 Research Methods. (4)  
fall and spring  
Planning, execution, analysis, and reporting of experiments. Literature, procedures, and instruments in representative areas of psychological research. 3 hours lecture, 3 hours lab. Prerequisites: PSY 290.  
General Studies: L  
M PSY 320 Learning and Motivation. (3)  
fall, spring, summer  
Principles of conditioning and motivation; approaches to learning, including acquisition of verbal materials, concepts, and motor skills; memory and transfer. Prerequisite: PSY 290.  
M PSY 323 Sensation and Perception. (3)  
fall and spring  
Underlying processes of vision, audition, and the other senses. Applies current research and theory in a lab environment. Prerequisite: PSY 290.  
M PSY 324 Memory and Cognition. (3)  
fall, spring, summer  
Processes underlying information storage and retrieval, including different kinds of memory, forgetting, depth of processing, and control processes. Prerequisite: PSY 290.  
M PSY 325 Physiological Psychology. (3)  
fall, spring, summer  
Relationships of physiological processes to behavior. Emphasizes nervous system functioning. Prerequisite: PSY 290 or instructor approval.  
M PSY 330 Statistical Methods. (3)  
spring  
Advanced application of statistics to psychology. Highly recommended for students interested in attending graduate school. 3 hours lecture, 1 hour lab. Prerequisite: PSY 230.  
General Studies: CS  
M PSY 390 Experimental Psychology. (3)  
spring  
Continuation of concepts in PSY 290, with emphasis on multifactor designs and programmatic sequence of experiments. Lecture, lab. Prerequisite: PSY 290.  
General Studies: L  
M PSY 399 Supervised Research. (1–3)  
fall, spring, summer  
M PSY 420 Analysis of Behavior. (3)  
selected semesters  
Research, applications, and philosophy of the analysis and control of human behavior. Prerequisites: PSY 290, 320.  
General Studies: L  
M PSY 422 Motor Control in Special Populations. (3)  
selected semesters  
Discusses principles of motor control theories and related practical applications for certain special developmental populations. Lecture, discussion. Cross-listed as KIN 422. Credit is allowed for only KIN 422 or PSY 422. Prerequisite: KIN 345.  
General Studies: L  
M PSY 424 Genetic Psychology. (3)  
spring  
Introduces the concepts, methodologies, and findings of behavioral genetics for Psychology majors. Prerequisites: PGS 101; PSY 230, 290.  
General Studies: L  
M PSY 425 Biological Bases of Behavior. (3)  
selected semesters  
Critical study of physiological psychology; brain mechanisms underlying motivation and learning. Prerequisites: PSY 290, 325.  
General Studies: L  
M PSY 426 Neuroanatomy. (4)  
selected semesters  
Structure and function of mammalian brain, including sheep brain dissection. 3 hours lecture, 3 hours lab. Prerequisites: PSY 290, 325.  
M PSY 434 Cognitive Psychology. (3)  
spring  
Human organism as a processor of information, from perception to cognition. Abstract concepts, semantic memory, attention, and mental imagery. Prerequisites: PSY 290, 323 (or 324).  
General Studies: L  
M PSY 437 Human Factors. (3)  
fall  
Emphasizes human factors in high-technology systems. Specific topics include systems development, systems analysis techniques, displays, and controls. Prerequisite: PSY 290.  
General Studies: L  
M PSY 470 Psychopharmacology. (3)  
fall and spring  
Basis of drug action at physiological and behavioral levels. Psychological and medical applications and limitations of drugs used in the treatment of mental illness. Prerequisites: PSY 290, 325.  
M PSY 484 Internship. (1–12)  
selected semesters  
M PSY 492 Honors Directed Study. (1–6)  
selected semesters  
M PSY 493 Honors Thesis. (1–6)  
selected semesters  
M PSY 494 Special Topics. (1–4)  
selected semesters  
M PSY 497 Honors Colloquium. (1–6)  
selected semesters  
M PSY 498 Pro-Seminar. (1–7)  
fall and spring  
Topics may include the following:  
• Behavioral Neuroscience Research. (3)  
General Studies: L
MINOR IN RELIGIOUS STUDIES

The minor in Religious Studies consists of 18 semester hours, at least 15 of which must be in the upper division. REL 305 is required. For minor verification, students must consult a department advisor.

BIS CONCENTRATION

A concentration in religious studies is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

CERTIFICATES AND EMPHASES

The following certificate programs or emphases are offered in conjunction with the BA in Religious Studies. For more information on each, see “Certificate Programs and Areas of Emphasis,” page 509, or access the department Web site at www.asu.edu/clas/religious_studies.

Asian Studies Certificate. Students majoring in Religious Studies may elect to pursue an Asian Studies emphasis or East Asian Studies Certificate combining courses from the major with selected outside courses of wholly Asian content.

Islamic Studies Certificate. Students majoring in Religious Studies may elect to earn an Islamic Studies Certificate by successfully completing the requirements mentioned in “Islamic Studies Certificate,” page 512.

Jewish Studies Certificate. Students majoring in Religious Studies may elect to pursue a Jewish Studies Certificate combining courses from the major with selected outside courses in the area of Jewish Studies.

Latin American Studies Certificate. Students majoring in Religious Studies may elect to pursue a Latin American Studies certificate combining courses from the major with selected outside courses of wholly Latin American content.

Russian and East European Studies Certificate. Students majoring in Religious Studies may elect to earn a Russian and East European Studies Certificate by successfully completing one of the options mentioned in “Russian and East European Studies,” page 513.

Southeast Asian Studies Emphasis. Students majoring in Religious Studies may elect to earn a Southeast Asian Studies Certificate by successfully completing the requirements.

Women and Gender Studies. Students majoring in Religious Studies may elect to earn a Women and Gender Studies Certificate by successfully completing the requirements.

DEPARTMENT OF RELIGIOUS STUDIES

www.asu.edu/clas/religious_studies

Joel D. Gereboff, Chair

Professors: Cady, Feldhaus, Foard, Morrison, Samuelson
Associate Professors: Clay, Fessenden, Gereboff, Henn, Moore, Schober, Swanson, Woodward
Assistant Professors: Aguilera, Carlson, Duncan, Espinosa, Park, Umar, Wenger
Lecturer: Kefeli-Clay

RECESS STUDIES—BA

The BA degree in Religious Studies consists of 45 semester hours, 30 of which must be in religious studies (including 21 in upper-division courses) and 15 of which must be in related fields. In order for the student to become acquainted with the character and role of religions across a wide spectrum of social and historical contexts, the 30 semester hours in religious studies must include the following courses:

1. REL 305 Ritual, Symbol, and Myth;
2. at least one course from each of the following distributional areas: Religion in the Americas, Religion and Asian Cultures, and Religion and Western Cultures;
3. REL 400 Approaches to Religion; and
4. two research seminars, including REL 405 Problems in Religious Studies, which may be repeated for credit; or
5. in place of a second seminar, a student may take REL 499 to write an undergraduate thesis.

The Religious Studies major is an appropriate choice for students wishing to explore such areas as African or African American studies; Islamic studies; myth, ritual, and the arts; Native American studies; and religion and politics. All majors must plan their programs in consultation with a departmental advisor. A minimum GPA of 2.50 is required in the 30 semester hours of religious studies courses.
GRADUATE PROGRAM

The faculty in the Department of Religious Studies offer a graduate program leading to the MA degree for those who wish to enter a doctoral program in the study of religions, for those who wish to teach at the community college level, and for those in nonacademic careers who desire general competence in the academic study of religions. A doctoral program is offered. See the Graduate Catalog for requirements.

RELIGIOUS STUDIES (REL)

M REL 100 Religions of the World. (3)
fall and spring
Introduces the history of religious traditions of the world, including Buddhism, Christianity, Hinduism, Islam, Judaism, and others. Credit is allowed for only REL 100 or 200. General Studies: HU, G

M REL 200 The Study of Religious Traditions. (3)
selected semesters
Writing-intensive course introducing analytical skills necessary for understanding religious traditions. Beliefs, practices, and communities of several religious traditions of the world. Credit is allowed for only REL 200 or 100. Prerequisite: ENG 101 or 105. General Studies: L/HU, G

M REL 201 Religion and the Modern World. (3)
once a year
Introduces the nature and role of religious beliefs and practices in shaping the lives of individuals and societies, with particular attention to the modern world. Prerequisite: ENG 101 or 105. General Studies: L/HU

M REL 202 Religion and Popular Culture. (3)
once a year
Explores various intersectors between religion and the popular media, including music, news, advertising, the visual arts, literature, performance, and film. Lecture, discussion. General Studies: HU, C

M REL 203 Saints and Sinners: Explorations in Sacred Biography. (3)
selected semesters
Comparison of the role of biography across religions to examine the process of categorizing people as saints or sinners. Lecture, discussion. General Studies: HU, H

M REL 210 Introduction to Judaism. (3)
once a year
Beliefs, ceremonies, festivals, and institutions of Judaism emphasizing the contemporary era. Assumes no previous knowledge about Judaism. Prerequisite: ENG 101 or 105. General Studies: L/HU, H

M REL 225 African American Religion. (3)
selected semesters
Introduces the history and development of the African American religious tradition. Lecture, discussion. General Studies: HU, C

M REL 240 Introduction to Southeast Asia. (3)
fall and spring
Interdisciplinary introduction to the cultures, religions, political systems, geography, and history of Southeast Asia. Cross-listed as ASB 240/GCU 240/HST 240/POS 240. Credit is allowed for only ASB 240 or GCU 240 or HST 240 or POS 240 or REL 240. General Studies: HU/SB, G

M REL 260 Introduction to Islam. (3)
spring
Examines Islamic beliefs, ceremonies, festivals, and institutions. Assumes no prior knowledge about Islam. Lecture, discussion. General Studies: HU, G

M REL 270 Introduction to Christianity. (3)
once a year
Beliefs, ceremonies, festivals, and institutions of Christianity, emphasizing the contemporary era. Assumes no previous knowledge about Christianity. General Studies: HU

M REL 301 Comparative Mysticism. (3)
fall and spring
Comparative examination of Eastern and Western mystical traditions from antiquity to the present. Lecture, discussion. Prerequisite: REL 100. General Studies: HU

M REL 305 Ritual, Symbol, and Myth. (3)
fall and spring
Ritual, symbol, and myth as types of religious expression, with examples selected from the nonliterate religions of the world. General Studies: L/HU

M REL 310 Western Religious Traditions. (3)
fall and spring
Religious traditions of Judaism, Christianity, and Islam, comparing their doctrinal, institutional, and ritual systems and social histories. Lecture, discussion. General Studies: HU, H

M REL 315 Hebrew Bible (Old Testament). (3)
fall and spring
Nature, content, background, historical situation, and message of the books of the Hebrew Bible in English translation. General Studies: L/HU, H

M REL 317 Introduction to Rabbinic Judaism. (3)
selected semesters
Historical analysis of the thought, literature, and institutions of rabbinic Judaism. General Studies: HU, H

M REL 318 Contemporary American Jewish Identities. (3)
spring
Analyzes the complexity and diversity of the contemporary American Jewish community in religious and secular affairs. Lecture, discussion. Cross-listed as SOC 375. Credit is allowed for only REL 318 or SOC 375. General Studies: HU/SB, C

M REL 320 American Religious Traditions. (3)
fall and spring
Examines the formation, development, and interaction of major American religious traditions (indigenous, African American, Asian American, and Euro-American). General Studies: HU, C, H

M REL 321 Religion in America. (3)
fall and spring
History of religion in America with attention to issues of historiography, pluralism, gender, race, ethnicity, politics, and social reform. General Studies: HU, C, H

M REL 322 Malcolm and Martin. (3)
selected semesters
Examines and contrasts the lives, ministries, contributions, and legacies of Malcolm X and Martin Luther King, Jr. General Studies: HU, C

M REL 323 Black Religion: A Biographical Approach. (3)
selected semesters
Examines the experiences, motivations, and contributions of a number of figures associated with African American religion. General Studies: HU, C

M REL 324 Spirituals and the Blues. (3)
spring

M REL 325 U.S. Latino Religion and Culture. (3)
fall
Survey of the formative myths, rituals, and symbols of Mexican Americans, Puerto Ricans, and Cuban Americans. Lecture, discussion. General Studies: HU, C
M REL 330 Native American Religious Traditions. (3) 
teaching assistant 
Presents world views and religious thought through the art, 
architecture, literature, music, mythology, ritual, and folklore of 
representative tribes in North America. 
General Studies: HU, C

M REL 331 History of Native American Religious Traditions. (3) 
teaching assistant 
Role of religion in Native American history, including missionization; 
religious adaptation; and prophetic, messianic, and religious 
revitalization movements. 
General Studies: L, HU, G, H

M REL 332 South American Indian Religions. (3) 
selected semesters 
Introduces the sacred stories, ceremonies, and beliefs of Native South 
American peoples in their historical contexts. 
General Studies: HU, G

M REL 343 Taoism. (3) 
teaching assistant 
Introduces the history, doctrines, and practices of Taoism from the 
middle-second century CE up to the present. Lecture, discussion. 
General Studies: L, HU, G, H

M REL 344 Religion and Values in Japanese Life. (3) 
teaching assistant 
Japanese values expressed in the life and annual cycles of the family, 
local and national identities, and popular culture. Lecture, discussion. 
General Studies: HU, G

M REL 345 Asian Religious Traditions. (3) 
teaching assistant 
Introduces the major concepts of religious beliefs, rituals, and 
practices in Hinduism and Buddhism. Lecture, discussion. 
General Studies: HU, G

M REL 346 Chinese Religions. (3) 
selected semesters 
Examines the history and practices of Chinese religions with particular 
attention to culture, society, and history. 
M REL 350 Hinduism. (3) 
teaching assistant 
Studies diverse forms of Hinduism through its institutions, literature, 
folklore, art, and architecture. 
General Studies: L, HU, G

M REL 351 Buddhism. (3) 
teaching assistant 
Doctrines, practices, and institutions of the Buddhist religion, 
emphasizing its role in the history and culture of Asian societies. 
General Studies: L, HU, G

M REL 352 Modern Buddhism. (3) 
teaching assistant 
Examines modernist visions with regard to Buddhist institutions, 
practices, colonialism and cultural transformations in Asia and the 
West. Lecture, discussion. Prerequisite: REL 100 or 345 or 351.

M REL 355 Japanese Cities and Cultures to 1800. (3) 
teaching assistant 
Relations among ideas and literary, visual, and performing arts of the 
ancient aristocracy, medieval samurai, and early modern 
townpeople. Cross-listed as HUM 310. Credit is allowed for only 
HUM 310 or REL 355. 
General Studies: L, HU, G, H

M REL 365 Islamic Civilization. (3) 
teaching assistant 
Examines the worldwide transformations of Islamic religion, cultures, 
and societies in the modern period. Lecture, discussion. 
General Studies: HU, G, H

M REL 366 Islam in the Modern World. (3) 
selected semesters 
Examines the worldwide transformations of Islamic religion, cultures, 
and societies in the modern period. Lecture, discussion. 
General Studies: HU, G, H

M REL 369 Women in Islam. (3) 
teaching assistant 
Examines the roles women have played through Islamic history 
(Middle East) and the changing discourse on gender identity. Lecture, 
seminar. 
M REL 371 New Testament. (3) 
teaching assistant 
Origins and literature of early Christian communities; historical 
investigations of the types of oral and written tradition in the New 
Testament. 
General Studies: HU

M REL 372 Formation of the Christian Tradition. (3) 
teaching assistant 
Origins, development, and expansion of Christianity; major themes 
and tensions from the New Testament world to the beginning of the 
Middle Ages. 
General Studies: HU, H

M REL 373 Women in Judaism. (3) 
fall 
Studies the legal, social, and cultural status of Jewish women in 
various historical and contemporary societies. Cross-listed as WST 
372. Credit is allowed for only REL 373 or WST 372.

M REL 374 Witchcraft and Heresy in Europe. (3) 
selected semesters 
Examines the sacred stories, ceremonies, and beliefs of Native South 
American peoples in their historical contexts. 
General Studies: HU, G

M REL 377 Religion in Russia. (3) 
selected semesters 
Examines the history of the various religious traditions of Russia and 
the former USSR from an interdisciplinary perspective. 
General Studies: HU, H

M REL 378 Religion, Violence, and Conflict Resolution. (3) 
selected semesters 
Examines role of religion in conflict; how it can foment 
violence or serve as a moral guide for principled peace. Discussion, 
case studies, field trips. 
M REL 379 Religion, Nationalism, and Ethnic Conflict. (3) 
selected semesters 
Examines the role of religion in national and ethnic conflict in the 
contemporary world. 
General Studies: HU, G

M REL 381 Religion and Moral Issues. (3) 
teaching assistant 
Manner in which human religiousness relates to social concerns, e.g., 
sexuality, the environment, bioethical issues, and violence. 
General Studies: L, HU

M REL 382 Religion, Magic, and Science. (3) 
teaching assistant 
Relationship and conflict between religion, magic, and science in the 
West from antiquity to the present. Lecture, discussion. 
General Studies: L, HU

M REL 383 Origins, Evolution, and Creation. (3) 
selected semesters 
Examines scientific, mythic, and religious ideas relating to origins 
(particularly human). Place of antievolutionism and “scientific 
creationism” in American culture. Lecture, discussion. Cross-listed as 
BIO 344/HPS 311/HUM 371. Credit is allowed for only BIO 344 or 
HPS 311 or HUM 371 or REL 383.

M REL 384 The Bible and Archaeological Discoveries. (3) 
fall 
Studies the Bible alongside the stories that architecture, pottery, 
metalwork, sculpture, tombs, and paintings of the ancient Near East 
have to tell. May be repeated for credit. 
M REL 385 Contemporary Western Religious Thought. (3) 
selected semesters 
Introduces contemporary Jewish and Christian thought. Topics include 
religion and politics, problem of evil, interpretations of God, and 
modern religious diversity. 
General Studies: HU

L literacy and critical inquiry / MA mathematics / CS computer/statistics/ 
quantitative applications / HU humanities and fine arts / SB social and 
behavioral sciences / SG natural science—general core courses / SQ natural 
science—quantitative / C cultural diversity in the United States / G global / 
H historical / See “General Studies,” page 93.
M REL 368 America and the Holocaust. (3) fall
Analyzes the historical and sociopolitical factors that shaped U.S. policy decisions regarding Germany's assault on Europe's Jews. General Studies: HU/SB
M REL 390 Women and Religion. (3) fall and spring
Role of women in several organized religions and/or religious sects, including a study of myths and symbols as they are used to establish, maintain, and enforce sex roles within specific religions. General Studies: HU, G
M REL 394 Special Topics. (1–4) selected semesters
M REL 400 Approaches to Religion. (3) fall
Examines the intellectual history of academic study of religion through various theoretical approaches, major themes, and thinkers. Seminar. Prerequisite: REL 305.
M REL 405 Problems in Religious Studies. (3) fall and spring
Selected topics in religious studies; involves students in research interests of instructor. May be repeated for credit when topics vary. Seminar. Prerequisite: at least 9 semester hours of REL courses or instructor approval.
M REL 410 Judaism in Modern Times. (3) selected semesters
Variety of expressions of Judaism and Jewishness in the modern period. Topics may include American Judaism or religious responses to the Holocaust. General Studies: HU, H
M REL 420 Religion in American Life and Thought. (3) selected semesters
Influence of religion on American society, culture, and ideas; the distinctive character of religion in America. Prerequisite: REL 320 or 321 (or its equivalent). General Studies: HU
M REL 427 American Religious Thought. (3) selected semesters
Thought of representative American religious thinkers, e.g., Jonathan Edwards, William Ellery Channing, Horace Bushnell, and Reinhold Niebuhr. Prerequisite: REL 320 or 321 (or its equivalent). General Studies: HU, H
M REL 444 Religion in Japan. (3) once a year
Religion in Japanese history, especially the development of Japanese Buddhism, and religion in the modern transformation of Japan. Prerequisite: instructor approval. General Studies: HU, G, H
M REL 460 Studies in Islamic Religion. (3) selected semesters
Issues in the interpretation and understanding of Islamic texts, history, society, culture, and rituals. May be repeated for credit when topics vary. Prerequisites: both REL 365 and Religious Studies major or only instructor approval. General Studies: HU, G
M REL 470 Religion in the Middle Ages. (3) selected semesters
Religious aspects of medieval life and thought; variety of forms of dissent, heresy, and reform movements from the 4th to 13th centuries. General Studies: HU, H
M REL 471 Reformation and Modern Christianity. (3) selected semesters
Protestant Reformation to contemporary Christian movements; includes factors in the dissolution of the Medieval Christian synthesis, variety of reform movements and reformation patterns, Catholic counter-reform measures, formation of liberal theology, ecumenical movement, and the World Council of Churches. General Studies: HU, H
M REL 480 Religion and Global Politics. (3) once a year
Explores the nature and role of religion in international politics in the modern period. Lecture, discussion. General Studies: G
M REL 483 Religion and Science. (3) spring
Investigates the correlation between science and religion as an interdisciplinary study from a historical perspective. Readings, film, lecture, discussion. Prerequisite: junior standing or instructor approval.
M REL 484 Special Topics in Religious Studies. (3) fall and spring
Open to all students. Topics may be selected from various areas. Prerequisite for freshmen: instructor approval.
M REL 498 Pro-Seminar in Religious Studies. (3) selected semesters
For students with a major or minor emphasis in Religious Studies. General Studies: HU, H
M REL 499 Individualized Instruction. (1–3) fall and spring
Omnibus Courses. For an explanation of courses offered but not specifically listed in this catalog, see “Omnibus Courses,” page 63.
Graduate-Level Courses. For information about courses numbered from 501 to 799, see the Graduate Catalog, or access www.asu.edu/catalog on the Web. In some situations, undergraduate students may be eligible to take these courses; for more information, see “Graduate-Level Courses,” page 62.

Department of Sociology

www.asu.edu/clas/sociology
480/965-3546
COOR 5681

Jennie Jacobs Kronenfeld, Chair
Professors: Cobas, Kronenfeld, Kulis, Weitz
Associate Professors: Agadjanian, Benin, Glick, Keith, Menjivar, Miller-Loessl, Sullivan
Assistant Professor: Yabiku
Senior Lecturer: Fine
Lecturers: Fey, Lewin

SOCILOGY—BA

The BA degree in Sociology requires a minimum of 30 semester hours of Sociology course work and 15 hours in closely related fields. Of the 30 required hours, a minimum of 18 hours must be upper-division with at least 12 of the 18 upper-division hours taken in residence at the Tempe campus. All upper-division courses in the major must be completed with a grade of “C” (2.00) or higher. The following courses are required:

SOC 101 Introductory Sociology SB ........................................3
or SOC 301 Principles of Sociology SB (3)
SOC 390 Social Statistics I CS .................................................3
SOC 391 Sociological Research SB ........................................3
SOC 483 History of Social Thought SB ....................................3
or SOC 486 Contemporary Theory SB (3) ...
Total ...................................................................................12

642
Sociology majors may complete the remaining 18 required hours through selecting one of two options. For a general sociology degree, students must choose six courses that sample at least three of the following seven sociology content areas:

1. family;
2. intergroup relations and social psychology;
3. political/comparative-historical;
4. social problems and processes;
5. stratification/occupations/organization;
6. urban sociology/demography; or
7. race and ethnicity.

If majors desire a more focused preparation in a specialized area, they may complete the remaining 18 hours in one of five focus areas: family issues, urban issues, diversity issues, work/organizational issues, and health issues. Students choosing this option must complete one required focus area course. Other requirements include four courses from a list of optional courses within that focus area and one additional sociology course. Internships (SOC 484) are available within the focus area option for those who qualify.

Information concerning the two options for fulfilling major requirements is available in the Department of Sociology office in COOR 5681, and on the Internet at www.asu.edu/clas/sociology/undergraduate/undergraduate.html.

MINOR IN SOCIOLOGY

The minor in Sociology requires 18 hours, of which 12 hours must be upper-division courses, with at least six upper-division hours completed at the Tempe campus. The required courses are as follows:

SOC 101 Introductory Sociology SB ..................................................3 or SOC 301 Principles of Sociology SB (3)
SOC 391 Sociological Research SB ..................................................3 or SOC 483 History of Social Thought SB (3)
or SOC 486 Contemporary Theory SB (3)

Total ........................................................................................................... 6

The remaining four courses consist of sociology electives.

BIS CONCENTRATION

A concentration in sociology is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

GRADUATE PROGRAMS

The faculty in the Department of Sociology offer programs leading to the MA and PhD degrees. See the Graduate Catalog for requirements.
M SOC 334 Technology and Society. (3)  
selected semesters  
Development of technology in relation to society, work, science, the  
environment, public health, and cultural values related to social  
change. Lecture, discussion. Prerequisite: SOC 101 or 301 or  
instructor approval.  
General Studies: SB  
M SOC 340 The Sociology of Deviance. (3)  
tail, spring, summer  
Sociological analysis of stigmatized behaviors and conditions,  
including the causes, effects, and management of stigma.  
Prerequisite: SOC 101 or 301 or instructor approval.  
General Studies: SB  
M SOC 341 Modern Social Problems. (3)  
tail, spring, summer  
Selected issues such as education, poverty, race relations, crime,  
health care for women. Prerequisite: SOC 101 or 301 or instructor  
approval.  
M SOC 346 Marriage Problems in Contemporary Society. (3)  
spring  
Marital and family problems in today's society from the viewpoint  
of personal and cultural adjustment. Prerequisites: both SOC 101 (or  
301) and an additional 3 hours in sociology or only instructor approval.  
General Studies: L/SB  
M SOC 347 Family Violence. (3)  
selected semesters  
Current research and theories about domestic violence, including  
child maltreatment, spousal aggression, and courtship violence.  
Prerequisite: SOC 101 or 301 or instructor approval.  
General Studies: SB  
M SOC 348 Aging and the Life Course. (3)  
tail and spring  
Social aspects of aging. Theoretical and methodological perspectives  
and problems of aging such as life satisfaction, retirement, and  
adjustment to role loss. Prerequisite: SOC 101 or 301 or instructor  
approval.  
General Studies: SB  
M SOC 350 Contemporary American Jewish Identities. (3)  
fall, summer  
Analyzes the complexity and diversity of the contemporary American  
Jewish community in religious and secular affairs. Lecture, discussion.  
Cross-listed as REL 318. Credit is allowed for only REL 318 or SOC  
375.  
General Studies: HU/SA, C  
M SOC 351 Sociology of Mass Communication. (3)  
tail and spring  
Sociological exploration of the major mass media as a communicative  
process in American society. Prerequisite: SOC 101 or 301 or  
instructor approval.  
General Studies: SB  
M SOC 352 Social Change. (3)  
selected semesters  
Patterns of social change, resistance to change, and change-  
producing agencies and processes. Prerequisite: SOC 101 or 301.  
General Studies: SB; G, H  
M SOC 354 Sociology of Health and Illness. (3)  
tail and spring  
Social aspects of illness and sociological analysis of the health care  
system and its practitioners. Prerequisite: SOC 101 or 301 or  
developer approval.  
General Studies: SB  
M SOC 355 Sociology of Religion. (3)  
selected semesters  
Interrelationship of culture, society, and religion; religion and social  
stratification; religious, economic, and political institutions; social  
change and religion. Emphasizes American society and institutions.  
Prerequisite: SOC 101 or 301 or instructor approval.  
General Studies: L/SB  
M SOC 356 Sociology of Religion. (3)  
tail  
Uses contemporary sociological perspectives to examine effects of  
schools and schooling on individuals and society. Prerequisite: SOC  
101 or 301 or instructor approval.  
General Studies: SB  
M SOC 360 Sociological Psychology. (3)  
tail and spring  
Interaction patterns between the sociocultural order and individuals;  
socialization process; norms, roles, and statuses; collective behavior.  
Prerequisite: SOC 101 or 301.  
General Studies: SB  
M SOC 362 Men and Masculinity. (3)  
selected semesters  
Sociological analysis of how masculine identity is defined, negotiated,  
and variously constructed depending upon class, ethnicity, age, and  
sexual orientation. Prerequisites: SOC 101 or 301; WST 100 (or 300).  
General Studies: SB  
M SOC 363 Men and Masculinity. (3)  
selected semesters  
Sociological analysis of how masculine identity is defined, negotiated,  
and variously constructed depending upon class, ethnicity, age, and  
sexual orientation. Prerequisites: SOC 101 or 301; WST 100 (or 300).  
General Studies: SB  
M SOC 365 Sociology of Mass Communication. (3)  
tail and spring  
Sociological exploration of the major mass media as a communicative  
process in American society. Prerequisite: SOC 101 or 301 or  
instructor approval.  
General Studies: SB  
M SOC 366 Sociology of Mass Communication. (3)  
tail and spring  
Sociological exploration of the major mass media as a communicative  
process in American society. Prerequisite: SOC 101 or 301 or  
instructor approval.  
General Studies: SB  
M SOC 367 Sociology of Mass Communication. (3)  
tail and spring  
Sociological exploration of the major mass media as a communicative  
process in American society. Prerequisite: SOC 101 or 301 or  
instructor approval.  
General Studies: SB  
M SOC 368 Sociology of Mass Communication. (3)  
tail and spring  
Sociological exploration of the major mass media as a communicative  
process in American society. Prerequisite: SOC 101 or 301 or  
instructor approval.  
General Studies: SB  
M SOC 369 Sociology of Mass Communication. (3)  
tail and spring  
Sociological exploration of the major mass media as a communicative  
process in American society. Prerequisite: SOC 101 or 301 or  
instructor approval.  
General Studies: SB  
M SOC 370 Social Statistics I. (3)  
tail, spring, summer  
Descriptive and inferential statistical methods for analysis of social  
data. Computer applications. Prerequisites: SOC 101 (or 301); a  
General Studies MA course.  
General Studies: CS  
M SOC 371 Sociological Research. (3)  
tail, spring, summer  
Methods of sociological research, including the fundamental  
assumptions underlying research and some practical experience in  
research design, data collection techniques, and data analysis.  
Prerequisites: both SOC 101 (or 301) and 390 or only instructor  
approval.  
General Studies: SB  
M SOC 372 Sociological Research. (3)  
tail, spring, summer  
Methods of sociological research, including the fundamental  
assumptions underlying research and some practical experience in  
research design, data collection techniques, and data analysis.  
Prerequisites: both SOC 101 (or 301) and 390 or only instructor  
approval.  
General Studies: SB  
M SOC 373 Sociological Research. (3)  
tail, spring, summer  
Methods of sociological research, including the fundamental  
assumptions underlying research and some practical experience in  
research design, data collection techniques, and data analysis.  
Prerequisites: both SOC 101 (or 301) and 390 or only instructor  
approval.  
General Studies: SB  
M SOC 374 Sociological Research. (3)  
tail, spring, summer  
Methods of sociological research, including the fundamental  
assumptions underlying research and some practical experience in  
research design, data collection techniques, and data analysis.  
Prerequisites: both SOC 101 (or 301) and 390 or only instructor  
approval.  
General Studies: SB  
M SOC 375 Contemporary American Jewish Identities. (3)  
spring  
Examines social and economic inequalities by class, gender, and  
race/ethnicity. Lecture, discussion. Prerequisites: both SOC 101 (or 301) and an additional 3 hours in sociology or only instructor approval.
M SOC 448 Epidemics and Society. (3)
fall
How epidemics occur; how they are perceived in society; how epidemics affect society. Prerequisite: SOC 101 or 301 or instructor approval.
General Studies: SB, G

M SOC 451 Comparative Sociology. (3)
selected semesters
Cross-cultural study of basic social institutions; the methodology of cross-cultural research. Prerequisite: ASB 102 or SOC 101 (or 301) or instructor approval.
General Studies: SB, G

M SOC 464 Sociology of Women. (3)
spring
Sociological analysis of the development, nature, and consequences of women’s position in contemporary society. Lecture, discussion. Prerequisite: SOC 101 or 301 or instructor approval.
General Studies: L/SB, C

M SOC 474 African Americans in Modern Society. (3)
selected semesters
Social and cultural heritage of black Americans; achievements and current trends. Lecture, discussion. Prerequisite: SOC 101 or 301 or instructor approval.
General Studies: SB, C

M SOC 483 History of Social Thought. (3)
fall, spring, summer
Social thought in human culture. Background of modern sociology. Prerequisite: SOC 101 or 301.
General Studies: SB

M SOC 484 Internship. (1–12)
fall and spring
See Department of Sociology advisor. Topics may include the following:
• Service Learning Fee.

M SOC 486 Contemporary Theory. (3)
selected semesters
Contemporary issues and crises in social theory with major focus on particular theorists. Ideological factors in theory, philosophical issues, the nature of theory and its relationship with methodology. Prerequisite: SOC 101 or 301 or instructor approval.
General Studies: SB

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

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

Department of Speech and Hearing Science
www.asu.edu/clas/shs
480/965-2374
COOR 2211

Sid P. Bacon, Chair
Professors: S. Bacon, Dorma, D. Ingram, Wilcox
Associate Professors: Azuma, Liss, Restrepo
Assistant Professors: Bian, Gray, Pittman, Wright
Clinical Professors: Mathy, Wiley
Clinical Associate Professors: C. Bacon, Brown, Maxwell, McBride, Mehta
Clinical Assistant Professors: K. Ingram, Wexler, Woods
Senior Lecturer: Forestal
Lecturers: Ammons, Francini, Howard, O’Brien, Quinn

SPEECH AND HEARING SCIENCE—BS

The BS degree in Speech and Hearing Science consists of 40 semester hours of speech and hearing science courses emphasizing the developmental and scientific aspects of language, speech, and hearing. The following courses, or their approved equivalents, are required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHS 250 Introduction to Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>SHS 310 Anatomical and Physiological Bases of Speech</td>
<td>3</td>
</tr>
<tr>
<td>SHS 311 Physical and Physiological Bases of Hearing</td>
<td>3</td>
</tr>
<tr>
<td>SHS 367 Language Science SB</td>
<td>3</td>
</tr>
<tr>
<td>SHS 375 Speech Science</td>
<td>3</td>
</tr>
<tr>
<td>SHS 376 Psychoacoustics</td>
<td>3</td>
</tr>
<tr>
<td>SHS 401 Introduction to Audiology</td>
<td>3</td>
</tr>
<tr>
<td>SHS 402 Modifying Communicative Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose two from the courses below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHS 407 Aural Rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>SHS 411 Developmental Speech Disorders</td>
<td>3</td>
</tr>
<tr>
<td>SHS 412 Developmental Language Disorders</td>
<td>3</td>
</tr>
<tr>
<td>SHS 450 Observation</td>
<td>1</td>
</tr>
<tr>
<td>SHS 465 Speech and Language Acquisition SB</td>
<td>3</td>
</tr>
<tr>
<td>SHS 496 Aural Rehabilitation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total | 37 |

The remaining speech and hearing science courses to complete the major are determined by the students in consultation with an advisor. A list of approved electives is available through the department. Supporting courses from related fields must include the following or their equivalents:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 201 Human Anatomy and Physiology I SG</td>
<td>4</td>
</tr>
<tr>
<td>MAT 170 Precalculus MA</td>
<td>3</td>
</tr>
<tr>
<td>PGS 101 Introduction to Psychology SB</td>
<td>3</td>
</tr>
</tbody>
</table>

PHY 101 Introduction to Physics SQ | 4 |
PSY 230 Introduction to Statistics CS | 3 |
PSY 290 Research Methods is strongly recommended.

MINOR IN SPEECH AND HEARING SCIENCE

The minor in Speech and Hearing Science consists of 24 semester hours with the following classes required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHS 105 Introduction to Human Communication Disorders</td>
<td>3</td>
</tr>
<tr>
<td>SHS 250 Introduction to Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>SHS 310 Anatomical and Physiological Bases of Speech</td>
<td>3</td>
</tr>
<tr>
<td>SHS 311 Physical and Physiological Bases of Hearing</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one from the courses below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHS 367 Language Science SB</td>
<td>3</td>
</tr>
<tr>
<td>SHS 375 Speech Science</td>
<td>3</td>
</tr>
<tr>
<td>SHS 376 Psychoacoustics</td>
<td>3</td>
</tr>
</tbody>
</table>

The remainder of the 24 credits must come from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHS 320 Facilitating Speech and Language Development in Early Childhood</td>
<td>3</td>
</tr>
<tr>
<td>SHS 401 Introduction to Audiology</td>
<td>3</td>
</tr>
<tr>
<td>SHS 402 Modifying Communicative Behavior</td>
<td>3</td>
</tr>
<tr>
<td>SHS 431 Developmental Speech Disorders</td>
<td>3</td>
</tr>
<tr>
<td>SHS 465 Speech and Language Acquisition SB</td>
<td>3</td>
</tr>
<tr>
<td>SHS 470 Developmental Language Disorders</td>
<td>3</td>
</tr>
<tr>
<td>SHS 485 Acquired Speech and Language Disorders</td>
<td>3</td>
</tr>
<tr>
<td>SHS 496 Aural Rehabilitation</td>
<td>3</td>
</tr>
</tbody>
</table>

BIS CONCENTRATION

A concentration in speech and hearing science is available under the Bachelor of Interdisciplinary Studies (BIS) degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

GRADUATE PROGRAMS

The faculty in the Department of Speech and Hearing Science offer programs leading to the MS degree in Communication Disorders, the AuD degree in Audiology, and the PhD degree in Speech and Hearing Science. See the Graduate Catalog for requirements.

SPEECH AND HEARING SCIENCE (SHS)

M SHS 101 American Sign Language I (4)  
fall and spring  
Basic receptive/expressive conversational skills; basic grammar and syntax rules. Orientation to deafness and deaf culture. Lecture, drill, practice, lab.

M SHS 102 American Sign Language II (4)  
fall and spring  

M SHS 105 Introduction to Human Communication Disorders (3)  
fall and spring  
Introduces hearing, language, and speech problems in children and adults. Lecture, demonstration.
M SHS 201 American Sign Language III. (4)

Fall and spring
Continued development of fluency in ASL with emphasis on more abstract concepts and the ability to narrate events. Lecture, discussion, drill, lab. Prerequisite with a grade of "C" (2.00) or higher: SHS 202.

M SHS 202 American Sign Language IV. (4)

Fall and spring
Further development of fluency in ASL with emphasis on literature, folklore, and signing narratives with multiple characters. Lecture, discussion, drill, lab. Prerequisite with a grade of "C" (2.00) or higher: SHS 201.

M SHS 250 Introduction to Phonetics. (3)

Fall
Introduces English phonetics with emphasis on phonetic transcription, articulation, phonology, and disorders of speech.

M SHS 310 Anatomical and Physiological Bases of Speech. (3)

Fall
Noncadaveric study of anatomical systems that underlie human speech and language, including respiration, phonation, articulation, and related nervous system processes. Prerequisite: BIO 201.

M SHS 311 Physical and Physiological Bases of Hearing. (3)

Fall
Studies the physical characteristics of sound and of the structure and function of the human auditory system. Prerequisites: BIO 201; PHY 101.

M SHS 320 Facilitating Speech and Language Development in Early Childhood. (3)

Fall and spring
Speech and language development and strategies for facilitating communication skills in early childhood educational settings.

M SHS 350 Brain Memory and Language. (3)

Fall
Covers memory and language and their associated brain areas, and the resulting behavioral consequences of injury and disease. Lecture, discussion, case studies, demonstrations. Prerequisite: PGS 101 or SHS 105.

M SHS 367 Language Science. (3)

Fall
Normative aspects and integration of language structure, comprehension, and production in children and adults.

M SHS 375 Speech Science. (3)

Spring
Normative aspects of speech, hearing, and language. Prerequisites: SHS 310, 311.

M SHS 376 Psychoacoustics. (3)

Spring
Introduces acoustics, cochlear anatomy and physiology, and the perception of sound. Prerequisite: SHS 311 or instructor approval.

M SHS 394 Special Topics. (1–4)

Selected semesters

M SHS 401 Introduction to Audiology. (3)

Fall
Introduces hearing disorders and the purposes and procedures for basic clinical tests of auditory function. Credit is allowed for only SHS 401 or 501. Prerequisites: both SHS 311 and 376 or only instructor approval.

M SHS 402 Modifying Communicative Behavior. (3)

Fall
Principles and techniques of modifying speech and language behavior. Prerequisite: SHS 250 (or its equivalent).

M SHS 431 Developmental Speech Disorders. (3)

Fall
Introduces the nature of articulation, fluency, resonance, and voice disorders in childhood. Prerequisites: SHS 250 and 310 (or their equivalents).

M SHS 450 Observation. (1)

Fall and spring
Opportunity to obtain observation experience at the ASU Speech and Hearing Center or at external sites. Prerequisite: instructor approval.
Women and Gender Studies Program

www.asu.edu/clas/womens_studies
480/965-2358
ECA 209

Mary Margaret Fonow, Director

CORE FACULTY

Professors: Fonow, Koblitz, Rothschild, Weitz
Associate Professors: Anderson, Cruz-Torres, Leong, Scheiner Gillis
Assistant Professors: Durfee, Fisher, Katsulis
Lecturer: McGibbney Vlahoulis

AFFILIATED FACULTY

African and African American Studies
Professor: Reyes
Assistant Professor: Robillard

American Indian Studies
Assistant Professor: Vicenti Carpio

Architecture and Landscape Architecture
Associate Professor: Fish Ewan

Art
Professors: Codell, Fahlman, Magenta, Schleif, Wolffthal
Assistant Professor: Mesch

Chicana and Chicano Studies
Regents’ Professor: Candelaria
Associate Professor: Magaña
Assistant Professors: Danielson, Szukinski-Quiroga

Community Resources and Development
Professor: Allison

Curriculum and Instruction
Professors: Cannella, Edelsky, Guzzetti

Educational Leadership and Policy Studies
Professor: Turner
Faculty Associate: Ewing

English
Professors: Adams, Crowley, Hogue, Horan, Lester, Nilsen, Pritchard, Rhodes
Associate Professor: Tohe
Assistant Professors: Fox, Parchesky, Sadowski-Smith, Thompson
Senior Lecturers: Heenan, Norton
Service Professional: McNeil

Exercise and Wellness (Polytechnic campus)
Associate Professor: Swan

Family and Human Development
Professor: Martin

History
Professors: Fuchs, Green, Lavrin, Warnicke
Associate Professors: Gray, Guillet, Stoner

Human Communication
Professors: Carlson, Nakayama
Associate Professors: Davis, De la Garza, Martinez
Assistant Professor: Park-Fuller

Human Evolution and Social Change
Professor: Brandt

Interdisciplinary Studies
Senior Lecturer: Nelson
Lecturer: Lattouf

Justice and Social Inquiry
Lincoln Professor: Walker
Professors: Jurik, Provine, Romero, Zatz
Associate Professors: Adelman, Menjivar

Kinesiology
Professor Emerita: Wells

Languages and Literatures
Regents’ Professor: Foster
Professors: Losse, Sanchez, Williams
Associate Professors: Choi, Orlich, Tompkins
Assistant Professors: Ali, Duncan, George, Gruzinska

Mathematics and Statistics
Professor: Barcelo
Research Professor: Greenwood

Music
Professor: Williamson
Associate Professor: Norton
Assistant Professor: Sullivan

Philosophy
Associate Professor: McGregor

Psychology
Regents’ Professors: Eisenberg, Russo
Professor: Chassin
Associate Professor: Saenz

Psychology in Education
Professors: Arredondo, Bernstein, Hackett, Moore

Religious Studies
Professor: Feldhaus
Associate Professor: Fessenden

Social and Behavioral Sciences (West campus)
Professor: Mueller
Associate Professor: Vaughan
Assistant Professor: Guevarra

Social Work
Professor: Segal
Associate Professors: Brzuzy, Gerdes, Stromwall
Assistant Professor: Larson

Sociology
Professors: Kronenfeld, Kulis
Associate Professors: Agadjanian, Benin, Miller-Loessi, Sullivan
The Women and Gender Studies Program is an interdisciplinary university program housed in the College of Liberal Arts and Sciences. Information on faculty affiliation is provided for reference.

WOMEN AND GENDER STUDIES—BA

Women and Gender Studies provides students with an intensive interdisciplinary liberal arts education that enables them to write well, think critically, and analyze problems effectively. Students take a variety of courses, including a capstone seminar requiring original research and writing, and an internship that helps them prepare for life after college. Original undergraduate research is encouraged, and some courses involve students in studying community problems and formulating policy solutions.

The BA degree in Women and Gender Studies consists of 45 semester hours (with a grade of “C” [2.00] or higher), of which 30 must be taken from WST or WSH prefixes or from other prefixes designated as part of the major. The other 15 must be in closely related fields chosen in consultation with an academic advisor. At least 36 of the 45 hours required for the major must be completed in upper-division courses.

Required Courses. Students must complete these courses:

- WST 100 Women and Society SB, C .................................3
- WST 377 History of American Feminist Thought L, C ..........3
- WST 380 Gender, Race, and Class L/SB, C .......................3
- WST 484 Internship ......................................................3
- WST 498 PS: Theoretical Issues in Women’s Studies ...........3

Total .................................................................................18

Electives. Students majoring in Women and Gender Studies must complete four courses (12 semester hours) chosen from the WST or WSH course list.

Related Fields. Students majoring in Women and Gender Studies must complete five courses (15 semester hours) in closely related fields from the WST or WSH course list, cross-listed or interdisciplinary courses, or other courses selected in consultation with a academic advisor.

Students must complete one course chosen from the electives or related fields on nonwestern women. A second course chosen from these same areas must also be completed on either nonwestern, racial or sexual minority women in the U.S. For more information, see an academic advisor.

MINOR IN WOMEN AND GENDER STUDIES

The Women and Gender Studies minor consists of 18 semester hours, 12 of which must be in the upper division. The following courses are required:

- WST 100 Women and Society SB, C .................................3
- WST 377 History of American Feminist Thought L, C ..........3
- WST 498 PS: Theoretical Issues in Women’s Studies ...........3

Total .................................................................................6

Twelve additional hours of approved women and gender studies courses must be taken after consultation with the Women and Gender Studies advisor.

Students pursuing a minor must register at least one semester before graduation and are encouraged to meet with the Women and Gender Studies academic advisor early in their course of studies.

CERTIFICATE PROGRAM IN WOMEN AND GENDER STUDIES

The certificate program is equivalent to an interdisciplinary minor, consisting of 18 semester hours, and is open to graduate as well as undergraduate students. Students pursuing a certificate must consult with the Women and Gender Studies advisor. See “Women and Gender Studies,” page 514, for a description of the certificate program.

BIS CONCENTRATION

A concentration in women and gender studies is available under the Bachelor of Interdisciplinary Studies degree, a program intended for the student who has academic interests that might not be satisfied with existing majors. Building on two academic concentrations (or one double concentration) and an interdisciplinary core, students in the BIS program take active roles in creating their educational plans and defining their career goals. For more information, see “School of Interdisciplinary Studies,” page 139.

GRADUATE STUDIES

The Women and Gender Studies Program plans to offer a graduate degree program within the next two years. In the interim, it is possible to pursue a graduate degree in some existing programs with a thesis or dissertation topic related to women’s studies. For more information, contact a Women and Gender Studies academic advisor.

WOMEN’S STUDIES HUMANITIES (WSH)

M WSH 330 Women, Film, and Culture. (3)

Explores how narrative films portray women, romantic relationships, and the possibilities for social change in gender relationships.
Prerequisite: WST 100 or 300.

M WSH 413 Lesbian, Gay, and Gender Studies. (3)

Explores lesbian, gay, bisexual, transgender, and queer experiences in the U.S. and globally, from sociological, psychological, historical, and literary perspectives. Lecture, discussion. Prerequisite: WST 100 or 300 or instructor approval.

General Studies: HU, C
M WSH 421 Girhood and Adolescence. (3)  
Spring  
Examines the changing construction of girhood and female adolescence through history, memoir, fiction, myth, music, and media. Lecture, discussion.

M WSH 464 Voices and Visions. (3)  
Fall and spring  
Examines the contributions of visionary women in the humanities; topics vary from semester to semester. May be repeated for credit when topics vary. Lecture, discussion. Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: HU, C

M WSH 470 Women and Popular Culture. (3)  
Spring  
Interdisciplinary examination of how gender is constructed in popular cultural forms. Lecture, discussion. Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: HU, C

M WSH 494 Special Topics. (1–4)  
Fall and spring  
Topics include a wide variety of interdisciplinary courses. Check department for current semester offerings.

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

WOMEN’S STUDIES (WST)  
For more WST courses, see the “Course Prefixes” table, or access www.asu.edu/aad/catalogs/courses. The campus designation—D (Downtown Phoenix), E (Polytechnic), M (Tempe), or W (West)—may affect how courses may be used to fulfill requirements.

M WST 100 Women and Society. (3)  
Fall, spring, summer  
Interdisciplinary introduction examining critical issues in women’s studies. Credit is allowed for only WST 100 or 300.  
General Studies: SB, C

M WST 191 First-Year Seminar. (1–3)  
Selected semesters  
Restricted to freshmen. Pass/fail. Topics may include the following:  
• All About Feminism. (1)

M WST 294 Special Topics. (1–4)  
Selected semesters  
Topics may include the following:  
• Women and Social Action

M WST 300 Women in Contemporary Society. (3)  
Fall, spring, summer  
Intensive interdisciplinary examination of such topics as gender roles, work, education, sexuality, politics, health, and law. Credit is allowed for only WST 300 or 100.  
General Studies: SB, C

M WST 313 Women and Sexuality. (3)  
Fall and spring  
Examines feminist theories about women’s sexuality and the relationship of these theories and related research to women’s experience. Lecture, discussion, Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: SB

M WST 360 Women as Healers. (3)  
Spring  
Examines the role of women as caregivers, healers, physicians, midwives, and nurses in different cultures and historical periods. Lecture, discussion.  
General Studies: SB, G

M WST 372 Women in Judaism. (3)  
Spring  
Studies the legal, social, and cultural status of Jewish women in various historical and contemporary societies. Cross-listed as REL 373. Credit is allowed only for REL 373 or WST 372.  
General Studies: SB, C

M WST 373 Latina/Chicana Issues. (3)  
Selected semesters  
Examines the roles Mexican American, Chicana, and/or Latina immigrant women play historically, socially, and politically in the United States. Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: SB, C

M WST 375 Women and Social Change. (3)  
Spring  
Combines research and theory on a contemporary social problem with a community action experience focusing on women’s social change initiatives. Lecture, field placement. Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: SB, C

M WST 377 History of American Feminist Thought. (3)  
Fall  
Explores the development of American feminist theory from its roots to 1975. Lecture, discussion. Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: L, C

M WST 378 Global Feminist Theory. (3)  
Spring  
Global feminist theories and exploration of the intersections of gender, race, ethnicity, class, and nation through critical analysis. Prerequisite: WST 100 or 300.  
General Studies: L, C, G

M WST 380 Gender, Race, and Class. (3)  
Fall and spring  
Explores cultural diversity, class, and gender issues in American social life. Lecture, seminar, analysis papers, and writing. Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: L/SB, C

M WST 470 Women and Popular Culture. (3)  
Spring  
Interdisciplinary examination of how gender is constructed in popular cultural forms. Lecture, discussion. Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: HU, C

M WST 477 Women and Violence. (3)  
Fall or spring  
Global examination of forms of violence against women at the individual, institutional, and cultural levels, and efforts to control it. Lecture, discussion. Prerequisite: WST 100 or 300 or instructor approval.  
General Studies: SB, C

M WST 484 Internship. (1–3)  
Fall and spring  
Practical experience to enhance the academic perspectives that emerge from women’s studies instruction. Prerequisite: internship coordinator approval.

M WST 498 Pro-Seminar. (1–7)  
Fall and spring  
Topics may include the following:  
• Theoretical Issues in Women’s Studies

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