



**UNDERGRADUATE
CATALOG**

2015–2016

The University of Texas at San Antonio™

July 2015

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Undergraduate Catalog

2015–2016

The University of Texas at San Antonio

Published July 2015

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Disclaimer

The provisions of this document do not constitute a contract, expressed or implied, between any applicant, student, staff or faculty member and The University of Texas at San Antonio or The University of Texas System. This document is a general information publication only, and it does not contain all regulations that relate to students.

The University of Texas at San Antonio reserves the right to withdraw courses at any time and to change fees, tuition, rules, calendar, curriculum, degree programs, degree requirements, graduation procedures, and any other requirement affecting students, staff and faculty. The policies, regulations, and procedures stated in this catalog are subject to change without prior notice, and changes become effective whenever the appropriate authorities so determine and may apply to both prospective students and those already enrolled. University policies are required to be consistent with policies adopted by the Board of Regents of The University of Texas System and are in compliance with state and federal laws.

Students are held individually responsible for meeting all requirements as determined by The University of Texas at San Antonio and The University of Texas System. Failure to read and comply with policies, regulations, and procedures will not exempt a student from whatever penalties he or she may incur.

Students should refer to the *UTSA Information Bulletin* for additional policies, procedures, and information directly related to their enrollment at UTSA.

Update: January 12, 2016: Undergraduate Certificate in Pathogenic Outbreak Investigations (p. 47) added to the Department of Information Systems and Cyber Security, College of Business.

General Information

The University's Main Campus address is The University of Texas at San Antonio, One UTSA Circle, San Antonio, TX 78249. The main telephone number is (210) 458-4011. The address of the Downtown Campus is 501 César E. Chávez Boulevard, San Antonio, Texas 78207. The main telephone number is (210) 458-2700. Visit UTSA on the Web at www.utsa.edu.

The Alma Mater

"Hail UTSA"

From our hills of oak and cedar
To the Alamo,
Voices raised will echo
As, in song, our praises flow.
Hail Alma Mater!
Through the years our loyalty will grow.
The University of Texas
San Antonio.

The Mascot

The roadrunner, a bird representative of the Texas Hill Country and the Southwest, was voted the UTSA mascot in 1977.

The School Colors

Official colors of The University of Texas System are orange and white. Upon recommendation from the UTSA Student Representative Assembly, the Board of Regents approved the addition of blue to the orange and white for UTSA's school colors.

Statement of Equal Educational Opportunity

No person shall be excluded from participation in, denied the benefits of, or be subject to discrimination under any program or activity sponsored or conducted by The University of Texas System or any of its component institutions on any basis prohibited by applicable law, including, but not limited to, race, color, national origin, religion, gender, age, veteran status, or disability. Discrimination on the basis of sexual orientation, gender identity and gender expression are also prohibited pursuant to University policy.

Accreditation

The University of Texas at San Antonio is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, master's, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of The University of Texas at San Antonio.

University Publications

The *UTSA Undergraduate Catalog* (p. 4) provides information about degrees offered by the undergraduate departments and lists the faculty. The chapter for each college describes the degree requirements for all majors offered by the college and lists the college's undergraduate courses. The *UTSA Information Bulletin* (<http://catalog.utsa.edu/informationbulletin>) gives important information about academic policies and procedures that apply to all students, regardless of the catalog under which they are seeking their degree. It includes the official academic calendar, admission procedures, and residence requirements. The bulletin contains policies on grades and the grade point average, credit

by examination, and scholastic probation and dismissal. This annual publication also gives historical and current information about the University's organization and physical facilities.

Academic Advising

UTSA views sound academic advising as a significant responsibility in educating its students. Employing developmental advising principles, UTSA academic advisors offer academic advising and guidance to empower students to realize their full potential. For this reason, each student is assigned to a particular professional academic advisor so the student can establish a strong mentoring relationship with her or his advisor, whom he or she may consult on all academic and curricular issues. Each advisor has a caseload of students which allows the advisor to be knowledgeable about their students' strengths, weaknesses, and preferences. Students should be comfortable and confident in the advice given them by their advisors, and know the advice they receive will be consistent and accurate. Students are encouraged to develop mentoring relationships with faculty for additional information and support.

Students are ultimately responsible for knowing and meeting degree requirements, for enrolling in appropriate courses to ensure orderly and timely completion of their degree programs, and for following the rules and policies of UTSA as found in the catalog, the current *UTSA Information Bulletin*, and the online schedule of classes. Each professional advisor sees students concerning all matters related to their academic status, such as progress toward degree completion, graduation status, academic warning, academic probation, academic dismissal, and changing majors. Students who are on academic warning or academic probation for the first time or who are reinstated after academic dismissal or with a Texas Success Initiative (TSI) deficiency are required to be advised, and holds are placed on their registration records to ensure that the student meets with the advisor. Students may also be required to meet with an advisor to obtain approval to register for restricted courses.

Frequent advisor contact provides students with current academic information and promotes progress toward educational goals. All students, regardless of classification or major, accepted into the Honors College (<http://honors.utsa.edu>) are advised through the Honors College. In some cases, a student may be advised by more than one advising component.

All academic advising is organized into the following components:

- Academic Major Advising: Downtown, Arts and Humanities, Social Sciences, Interdisciplinary Education, Business Studies, Engineering, Life and Health Sciences, Mathematical and Physical Sciences
- Student Placement Advising (includes students without declared majors; CAP students)
- Pre-Professional Advising: Health Professions, Pre-Law
- Honors
- Athletics
- Teacher Certification

Bachelor's Degree Regulations

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Degree Requirements

Overall Requirements

In order to receive a bachelor's degree from UTSA, a student must meet these minimum requirements:

1. Complete a minimum of 120 semester credit hours, at least 39 of which must be upper-division level.
2. Complete the University Core Curriculum requirements outlined in this chapter.
3. Complete at least one course designated as a Q-course to satisfy the Quantitative Scholarship requirement.
4. Complete the major and support work requirements and the free elective requirements for the desired degree. Free electives refer to any semester credit hours accepted by UTSA in transfer or awarded by UTSA that, for degree purposes, are not applied to Core Curriculum, major, minor, or support work requirements. The only restrictions placed upon courses used as free electives are as follows:
 - a. that a specific number of free elective credits must be at the upper-division level for some degree programs
 - b. that a maximum of 6 semester credit hours of physical activities courses can be applied to the free electives allowed for any UTSA degree program
 - c. that a maximum of 9 semester credit hours of military science can be applied to the free electives allowed for any UTSA degree program.
5. Meet all requirements for a degree as put forth by the Texas State Education Code, including the following:

- a. All students must complete 6 semester credit hours of American or Texas history.
 - b. All students must complete 6 semester credit hours of government or political science, including the Constitution of the United States and constitutions of states, with special emphasis on Texas.
6. Meet the minimum UTSA residence requirements.
 7. Achieve an overall 2.0 grade point average in all work attempted at UTSA and a 2.0 grade point average in all work included in the major.
 8. Be in good academic standing at UTSA.
 9. Apply formally for the degree before the deadline in the Office of the Registrar.

Minimum UTSA Residence Requirements

The following minimum UTSA residence requirements are in accordance with requirements established for all institutions in The University of Texas System and are requirements for all bachelor's degrees:

1. A minimum of 25 percent of the total number of semester credit hours required for a bachelor's degree must be completed at UTSA before a degree can be conferred.
2. Twenty-four of the last 30 semester credit hours applied to the degree program must be completed in residence, with the exception that among University of Texas System components, a student may, with the approval of the appropriate dean, transfer additional coursework to the program at the degree-granting institution.
3. Of the minimum 39 upper-division semester credit hours required in all degree programs, 18 must be earned in UTSA courses.
4. At least 6 semester credit hours of upper-division coursework in the major must be completed at UTSA. Additional hours in the major sequence may be required under individual UTSA degree plans.

Core Curriculum

The Core Curriculum is the part of each student's degree program in which he or she takes courses that meet requirements common to all UTSA undergraduates. Candidates for a bachelor's degree must achieve core objectives by completing the Core Curriculum. To meet the Quantitative Scholarship requirement, all candidates for a bachelor's degree must complete at least one course designated as a Q-course in the Schedule of Classes.

Transfer of Core Curriculum Courses

In accordance with the Texas Education Code, Chapter 61, Subchapter S, the UTSA Core Curriculum consists of 42 semester credit hours of coursework. If a student successfully completes the entire core curriculum at another public institution of higher education in Texas, that block of courses may be transferred to any other public institution of higher education in Texas and must be substituted for the receiving institution's core curriculum. Students will receive academic credit for each of the courses transferred and may not be required to take additional core curriculum courses at the receiving institution.

Students who have completed a portion of the Core Curriculum at another Texas public institution of higher education may use that coursework to satisfy UTSA Core Curriculum requirements if:

- the course is designated as meeting a Core Curriculum requirement at the institution, and
- the course fits within the UTSA Core Curriculum.

For transfer purposes, the designated Texas Common Course Numbering (TCCN) System courses will be accepted in transfer in lieu of these courses.

Students should consult with an academic advisor to determine the sequence of courses in the Core Curriculum and the major.

Students who have successfully completed the entire core curriculum at another public institution of higher education in Texas may satisfy the Quantitative Scholarship requirement by successfully completing either (1) an upper-level Q-course or (2) a Q-workshop. Q-workshops are offered to graduating seniors each semester.

Resolution of Transfer Disputes for Core Curriculum Courses

Public institutions of higher education must follow these procedures in the resolution of credit transfer disputes involving lower-division courses:

1. If an institution of higher education does not accept course credit earned by a student at another institution, the receiving institution will give written notice to the student and to the sending institution that the transfer of course credit is denied. At the request of the sending institution, the receiving institution will also provide written notice of the reasons it denied credit for a particular course or set of courses.
2. A student who receives notice may dispute the denial of credit by contacting a designated official at either the sending or the receiving institution.
3. The two institutions and the student shall attempt to resolve the transfer of the course credit in accordance with Texas Higher Education Coordinating Board rules and guidelines.
4. If the transfer dispute is not resolved to the satisfaction of the student or the sending institution within 45 days after the date the student received written notice of denial, the institution that denied the course credit for transfer will notify the Commissioner of Higher Education of its denial and the reasons for the denial.
5. The commissioner or the commissioner's designee will make the final determination about the transfer of course credit and give written notice of the determination to the involved student and institutions.

The Texas Higher Education Coordinating Board will collect data on the types of transfer disputes and the disposition of each case the commissioner considers.

If a receiving institution believes that a course that a student presents for transfer is not of acceptable quality, it should first contact the sending institution and try to resolve the problem. If the two institutions cannot come to a satisfactory resolution, the receiving institution may notify the Commissioner of Higher Education, who may investigate the course. If its quality is found to be unacceptable, the Texas Higher Education Coordinating Board may discontinue funding for the course.

Goals of the Core Curriculum

The Core Curriculum reflects the educational goals of the University. It is designed to enable students to assess the perspectives and accomplishments of the past and to move to the future with an informed and flexible outlook. It promotes intellectual adaptability, ethical awareness, and transfer among diverse modes of thought.

An essential aim of the Core Curriculum is to cultivate the verbal, numerical, and visual skills necessary to analyze and synthesize information, construct arguments, and identify and solve problems. Another essential aim is to foster understanding of the intellectual and cultural pluralism of modern society as it is reflected in natural science and mathematics; behavioral, cultural, and social science; and literature and artistic expression. By encouraging interdisciplinary study, the Core Curriculum seeks to develop critical awareness of the continuities and discontinuities of human thought, history, and culture, thus helping prepare students to meet the demands of change.

The University has recently added a quantitative scholarship requirement designed to enhance quantitative reasoning and critical thinking skills. In keeping with the educational goals of the University, this requirement will help students understand and evaluate data, assess risks and benefits, and make informed decisions in all aspects of their lives.

The University reviews Core courses for their success in promoting the goals of the Core, and it encourages students to select Core courses that will best achieve these goals. Beyond the Core, each student must fulfill the requirements of a major.

Expectations for Entering Students

The Core Curriculum is built on the assumption that the foundations of the general part of a student's education are laid in secondary school. Appropriate levels of proficiency in important subjects have been established as prerequisites for many of the courses in the Core, especially in the areas of rhetoric, mathematics, and language. Students who are unable to demonstrate proficiency may be required to take additional coursework before qualifying to take courses that meet Core Curriculum requirements. Entering students are also expected to possess proficiency in reading, knowledge of research and library tools, and a familiarity with basic computer skills. Students unable to demonstrate such proficiency and knowledge may be required to enroll in noncredit programs developed by UTSA to correct deficiencies in these areas.

Core Curriculum Component Area Requirements

First Year Experience Requirement (3 semester credit hours)

All students must complete the following course, for a total of 3 semester credit hours:

AIS 1203	Academic Inquiry and Scholarship (core component area 090)	3
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Communication (010) (6 semester credit hours)

Courses in this category focus on developing ideas and expressing them clearly, considering the effect of the message, fostering understanding, and building the skills needed to communicate persuasively. This requirement involves the command of oral, aural, written, and visual literacy skills that enable people to exchange messages appropriate to the subject, occasion, and audience.

Students must complete the following courses, for a total of 6 semester credit hours:

WRC 1013	Freshman Composition I (Q)	3
WRC 1023	Freshman Composition II (Q)	3

Mathematics (020) (3 semester credit hours)

Courses in this category focus on quantitative literacy in logic, patterns, and relationships. They involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

Students must complete one of the following courses, for a total of 3 semester credit hours:

MAT 1023	College Algebra with Applications	3
MAT 1033	Algebra with Calculus for Business	3
MAT 1043	Introduction to Mathematics	3
MAT 1073	Algebra for Scientists and Engineers	3
MAT 1093	Precalculus	3
MAT 1193	Calculus for the Biosciences	3
MAT 1214	Calculus I	4
STA 1053	Basic Statistics	3

Life and Physical Sciences (030) (6 semester credit hours)

Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. This requirement involves the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

Students must complete two of the following courses, for a total of 6 semester credit hours:

ANT 2033	Introduction to Biological Anthropology	3
AST 1013	Introduction to Astronomy	3
AST 1033	Exploration of the Solar System	3
BIO 1233	Contemporary Biology I	3
BIO 1243	Contemporary Biology II	3
BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
ES 1113	Environmental Botany	3
ES 1123	Environmental Zoology	3
ES 2013	Introduction to Environmental Systems I	3
ES 2023	Introduction to Environmental Systems II	3

GEO 1013	The Third Planet	3
GEO 1123	Life Through Time	3
GRG 2613	Physical Geography	3
PHY 1013	Universes	3
PHY 1943	Physics for Scientists and Engineers I	3
PHY 1963	Physics for Scientists and Engineers II	3

Language, Philosophy and Culture (040) (3 semester credit hours)

Courses in this category focus on how ideas, values, beliefs, and other aspects of culture express and affect human experience. This requirement involves the exploration of ideas that foster aesthetic and intellectual creation in order to understand the human condition across cultures.

Students must complete one of the following courses, for a total of 3 semester credit hours:

AAS 2013	Introduction to African American Studies	3
AAS 2113	African American Culture, Leadership and Social Issues	3
ANT 2063	Language, Thought, and Culture	3
ARA 1014	Elementary Arabic I	4
ARC 1113	Introduction to the Built Environment	3
ARC 1413	Architecture and Culture	3
CHN 1014	Elementary Chinese I	4
CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
CLA 2323	Classical Mythology	3
CSH 1103	Literary Masterpieces of Western Culture I	3
CSH 1113	Literary Masterpieces of Western Culture II	3
CSH 1213	Topics in World Cultures	3
CSH 2113	The Foreign Film	3
ENG 2013	Introduction to Literature	3
ENG 2213	Literary Criticism and Analysis	3
ENG 2383	Multiethnic Literatures of the United States	3
ENG 2423	Literature of Texas and the Southwest	3
FRN 1014	Elementary French I	4
FRN 2333	French Literature in English Translation	3
GER 1014	Elementary German I	4
GER 2333	German Literature in English Translation	3
GLA 1013	U.S. in the Global Arena	3
GRG 1023	World Regional Geography	3
GRK 1114	Introductory Classical Greek I	4
HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century	3
HIS 2533	Introduction to Latin American Civilization	3
HIS 2543	Introduction to Islamic Civilization	3
HIS 2553	Introduction to East Asian Civilization	3
HIS 2573	Introduction to African Civilization	3
HIS 2583	Introduction to South Asian Civilization	3
HUM 2093	World Religions	3

ITL 1014	Elementary Italian I	4
ITL 2333	Italian Literature in English Translation	3
JPN 1014	Elementary Japanese I	4
LAT 1114	Introductory Latin I	4
MAS 2013	Introduction to Chicano(a) Studies	3
PHI 1043	Critical Thinking	3
PHI 2023	Introduction to Ancient Philosophy	3
PHI 2033	Introduction to Early Modern Philosophy	3
PHI 2123	Contemporary Moral Issues	3
RUS 1014	Elementary Russian I	4
RUS 2333	Russian Literature in English Translation	3
SPN 1014	Elementary Spanish I	4
SPN 2333	Hispanic Literature in English Translation	3
WS 2013	Introduction to Women's Studies	3

Creative Arts (050) (3 semester credit hours)

Courses in this category focus on the appreciation and analysis of creative artifacts and works of the human imagination. These courses involve the synthesis and interpretation of artistic expression and enable critical, creative, and innovative communication about works of art.

Students must complete one of the following courses, for a total of 3 semester credit hours:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350	3
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750	3
AHC 1133	Survey of Modern Art	3
ARC 1214	Design I	4
ARC 1513	Great Buildings and Cities of the World	3
ART 1103	Introduction to Visual Arts	3
ART 1143	Art for Non-Art Majors	3
CLA 2033	Introduction to Classical Literature	3
DAN 2003	Introduction to Dance	3
ENG 1113	Introduction to Creative Literary Arts	3
HUM 2023	Introduction to the Humanities I	3
HUM 2033	Introduction to the Humanities II	3
HUM 2053	History of Film	3
MAS 2023	Latino Cultural Expressions	3
MUS 2243	World Music in Society	3
MUS 2623	Fundamentals of Music for the Non-Music Major	3
MUS 2633	American Roots Music	3
MUS 2663	History and Styles of Jazz	3
MUS 2673	History and Styles of Rock	3
MUS 2683	Masterpieces of Music	3
MUS 2693	The Music of Latin America and the Caribbean	3
MUS 2743	Music and Film	3
PHI 2073	Philosophy of Art	3

American History (060) (6 semester credit hours)

Courses in this category focus on the consideration of past events and ideas relative to the United States, with the option of including Texas History for a portion of this component area. These courses involve the interaction among individuals, communities, states, the nation, and the world, considering how these interactions have contributed to the development of the United States and its global role.

Students must complete two of the following courses, for a total of 6 semester credit hours:

HIS 1043	United States History: Pre-Columbus to Civil War Era	3
HIS 1053	United States History: Civil War Era to Present	3
HIS 2053	Texas History	3

Government-Political Science (070) (6 semester credit hours)

Courses in this category focus on consideration of the Constitution of the United States and the constitutions of the states, with special emphasis on that of Texas. This requirement involves the analysis of governmental institutions, political behavior, civic engagement, and their political and philosophical foundations.

Students must complete the following course:

POL 1013	Introduction to American Politics	3
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In addition, students must complete one of the following two courses:

POL 1133	Texas Politics and Society	3
POL 1213	Civil Rights in Texas and America	3

Social and Behavioral Sciences (080) (3 semester credit hours)

Courses in this category focus on the application of empirical and scientific methods that contribute to the understanding of what makes us human. These courses involve the exploration of behavior and interactions among individuals, groups, institutions, and events, examining their impact on the individual, society, and culture.

Students must complete one of the following courses, for a total of 3 semester credit hours:

AMS 2043	Approaches to American Culture	3
ANT 1013	Introduction to Anthropology	3
ANT 2043	Introduction to Archaeology	3
ANT 2053	Introduction to Cultural Anthropology	3
BBL 2003	Language, Culture, and Society	3
BBL 2243	Globalizing the Local: Bilingual Families, Communities, and Schools	3
CRJ 1113	The American Criminal Justice System	3
ECO 2003	Economic Principles and Issues	3
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics	3
EGR 1343	The Impact of Modern Technologies on Society	3
GRG 1013	Fundamentals of Geography	3

GRG 2623	Human Geography	3
HTH 2413	Introduction to Community and Public Health	3
HTH 2513	Personal Health	3
IDS 2113	Society and Social Issues	3
PSY 1013	Introduction to Psychology	3
SOC 1013	Introduction to Sociology	3
SOC 2013	Social Problems	3
SOC 2023	Social Context of Drug Use	3

Component Area Option (090) (3 semester credit hours)

The courses listed below meet the requirements specified in one of the foundational component areas above.

Students must complete either one of the following courses or any additional core curriculum course not previously used to satisfy a core competent area requirement, for a total of 3 semester credit hours:

COM 2113	Public Speaking	3
CS 1173	Data Analysis and Visualization using MATLAB	3
EGR 1403	Technical Communication	3
ENG 2413	Technical Writing	3
PAD 1113	Public Administration in American Society	3
PHI 2043	Introductory Logic	3

Gateway Courses

Many UTSA majors have designated certain courses as Gateway Courses. Gateway Courses are generally courses that are necessary for students to progress through their chosen major and are usually those courses which contain material in which a student needs a clear-cut comprehension in order to be successful in completing other course requirements for the major. That is, Gateway Courses often determine whether a student is a suitable candidate to pursue the indicated major.

In order to promote student success and to help ensure that students are choosing majors that are appropriate for their aptitudes and skills, a UTSA student may attempt a Gateway Course for his or her major at most twice. If the student does not successfully complete a Gateway Course in two attempts, then the student is required to change his or her major to a different major. Successfully completing a Gateway Course means achieving a grade in the course required by the major. For instance, if the major requires that all of the courses required for the major must be completed with a grade of "C-" or above, then successful completion of a Gateway Course for that major means receiving a grade of "C-" or higher in the course. However, receiving a grade of "CR" through the "Challenging a UTSA Course" process or the "UTSA Competency Examination" process will be regarded as successfully completing a Gateway Course. For the purpose of this policy, either dropping a course with a grade of "W" or taking an equivalent course at another institution of higher education counts as an attempt at taking the course.

The Gateway courses for each major are listed in this catalog under the program requirements.

Catalog of Graduation

Undergraduate students have six years from their semester of original registration to complete a degree program under the catalog in effect when they initially registered. A student may choose a subsequent catalog under which to complete graduation requirements, provided the student completed at least one course during a semester in which the selected catalog was in effect with a letter grade other than "W," "NR," or "F." The student must complete all degree requirements under the subsequent catalog.

Choosing a new catalog begins a new four-year time limit. Students who graduate under one catalog and begin a second degree must begin the new degree under the catalog in effect at that time with a four-year time limit to complete the second degree under that catalog. A student must have an approved catalog at the time an application for graduation is filed. All continuing students requesting a catalog change must do so through their assigned advisor.

Multiple Degrees

Pursuing One Degree Covering More Than One Major

A student completing one type of baccalaureate degree at UTSA (i.e., Bachelor of Arts, Bachelor of Science) may elect to concurrently complete other majors of that type. In such cases, only one bachelor's degree, which includes all majors, is awarded.

If a student wishes to pursue more than one major, all requirements for a single degree and major, plus the additional requirements for the other major(s), must be completed. It is unlikely that a student fulfilling more than one major can complete all requirements within the same number of semester credit hours required for a single major.

Pursuing Two Degrees Concurrently

Students pursuing degrees of different types (i.e., a Bachelor of Arts and a Bachelor of Science) at the same time must satisfy the specific catalog requirements for each degree. Courses common to both degree programs (such as Core Curriculum requirements) may be counted toward the requirements for each degree. Additional courses required in one degree program may be used as free or directed electives in the other degree program.

Pursuing Additional Degrees after Graduation

A student holding a baccalaureate degree from UTSA or another accredited institution may receive an additional bachelor's degree from UTSA as long as that degree is in a different major (regardless of the concentration) than the first degree. Such a student continues to be classified as an undergraduate and must:

1. complete a minimum of 30 semester credit hours of UTSA courses (of which at least 12 hours must be at the upper-division level in the major field) for each baccalaureate degree sought beyond the first
2. complete all requirements for the additional major(s), as set forth in this catalog

3. complete all requirements for the additional degree(s), including grade-point-average requirements, Core Curriculum requirements, support courses, elective courses, and upper-division courses, as set forth in this catalog
4. complete requirements under the catalog in effect at the time of beginning the second degree.

Minors

UTSA offers formal minors in a variety of disciplines and in several interdisciplinary fields. To receive a minor, students must complete at least 18 semester credit hours, including 6 hours at the upper-division level at UTSA, and must achieve a grade point average of at least 2.0 (on a 4.0 scale) on all work used to satisfy the requirements of a minor. Additional semester credit hours in the minor sequence may be required under individual UTSA degree plans. Students who declare minors must graduate under a catalog that includes minors and must meet any additional requirements listed in that catalog. All requirements for the minor must be met at graduation; a minor cannot be added to a student's degree program once he or she graduates. Declaration of a minor is voluntary. To declare a minor, a student must file a Change of Major or Degree Information form with their academic advisor. Students may not formally minor in more than two fields. Descriptions of minor requirements are included in the Colleges sections of this catalog.

Bachelor of Applied Arts and Sciences

The University of Texas at San Antonio offers a Bachelor of Applied Arts and Sciences (B.A.A.S.) degree for all students who have graduated from a regionally accredited community college with an Associate of Applied Science (A.A.S.) degree in one of various technical areas. The degree program has a high standard of quality and a structure of courses that will build on students' initial two years of higher education to earn a baccalaureate degree. Students seeking a B.A.A.S. degree will be able to pursue the following professional program at UTSA:

B.A.A.S. in Infancy and Childhood Studies offered by the Department of Interdisciplinary Learning and Teaching in the College of Education and Human Development.

All prospective B.A.A.S. student inquiries should be made to the College of Education and Human Development. The program is designed for students who have earned an Associate of Applied Science degree from a regionally accredited community college. If the A.A.S. degree does not cover related background coursework for the B.A.A.S., students may be required to take leveling or prerequisite coursework determined in consultation with a College of Education and Human Development academic advisor and the department chair. Students may transfer up to 78 semester credit hours from a community college to UTSA for the B.A.A.S. degree, upon the discretion of the college dean. However, vocational-technical coursework and community college credits in excess of 66 hours will only apply to the Bachelor of Applied Arts and Sciences degree.

The minimum number of hours required for the degree is 120. Requirements include:

1. 36 semester credit hours in an organized technical program - completed at a community college

2. 42 semester credit hours of Core Curriculum courses
3. 33 semester credit hours of major courses
4. 9 semester credit hours of support courses

Students who meet UTSA admission requirements are accepted conditionally for the Bachelor of Applied Arts and Sciences program of the College of Education and Human Development. Once confirmation of the earned A.A.S. degree through an official transcript has been received and upon consultation with the college advising center, students are accepted into the Bachelor of Applied Arts and Sciences degree program.

The degree represents advanced academic education which augments and advances prior applied and technical training. Although there may be some similarity between this degree and other academic offerings, they are in actuality different programs of study. As such, the above-listed B.A.A.S. degree program does not lead directly to teacher certification (though these students would be eligible for post-baccalaureate certification programs). Students interested in teacher certification should consult their academic advisor for specific requirements.

This degree program is not available to students who have not already completed an approved A.A.S. degree.

Transferring Courses

To prevent unnecessary loss of time and credit, prospective transfer students are encouraged to research as early as possible UTSA's admission policies and degree requirements in their areas of interest. Questions regarding the transferability of courses should be addressed to the Office of Admissions.

Students attending community colleges should also note the core curricula designed and adopted by the Texas Higher Education Coordinating Board to simplify the transfer of credit. Copies of these core curricula are available through most community college counselors.

Evaluation Procedures

An official evaluation of transfer credit is completed for degree-seeking applicants at the time of admission. This evaluation shows the equivalency of courses completed elsewhere to courses at UTSA and indicates their applicability to the UTSA Core Curriculum. Students may access their evaluations on ASAP (Automated Student Access Program).

At institutions across the state, the Texas Higher Education Coordinating Board has approved core curricula in the following areas: arts and sciences (including mathematics and natural sciences), business administration, engineering, art, and criminal justice. Although the courses in these core curricula at various institutions may not be precisely equivalent to courses in the *UTSA Undergraduate Catalog*, students who have successfully completed the core curricula at other institutions are given full credit toward the appropriate degree at UTSA.

Students who do not receive transfer credit for specific courses may review the policies for credit by examination or contact the Office of Admissions. Grades earned at other institutions are not averaged with grades earned at UTSA to determine a student's grade point average.

Resolution of Transfer of Credit Disputes

The Texas Higher Education Coordinating Board has established the following procedure for Texas public colleges and universities to follow in resolving transfer of credit disputes for lower-division

courses. (The individual courses covered by this procedure are defined by the Coordinating Board's guides: "Transfer of Credit Policies and Curricula (<http://www.theccb.state.tx.us/index.cfm?objectid=0BDF101B-0B61-7D8D-392A61E18CBC7093>)" and "Common Course Numbering System Guide (<http://www.tccns.org>).")

If a transfer course covered by the Coordinating Board policy is not accepted in transfer to UTSA, the student should contact the Office of Admissions for further explanation. The Office of Admissions, the student, and the sending institution will attempt to resolve the transfer of course credit in accordance with Coordinating Board rules.

If the transfer credit question is not resolved satisfactorily in the opinion of the student or the sending institution within 45 days of notification, the Office of Admissions states the reasons for the course denial to the Commissioner of Higher Education. The commissioner or a designee then provides a final written decision about the transfer course(s) in question to UTSA, the student, and the sending institution.

Course Types and Acceptability

Undergraduate college credits completed at other U.S. institutions are evaluated for transfer to UTSA by the Office of Admissions on the basis of UTSA equivalency tables and according to the guidelines in this section. Generally, all work transferred must be from a college or university accredited by a regional accrediting association (see section below for information about credit from a nonaccredited institution).

Credits completed at institutions outside the United States must be evaluated on an individual basis, at the student's expense, by the foreign credentials evaluation service designated by the Office of Admissions. Transfer credit from foreign institutions is accepted by UTSA on the basis of this evaluation.

Generally Accepted

Courses from an Accredited College or University

Any academic course from an accredited college or university in which a passing grade has been earned is accepted for transfer credit if it meets all other criteria in this section. Only those hours that apply toward a specific baccalaureate degree program count toward minimum degree requirements.

The applicability of particular courses completed at other institutions toward specific course requirements for a bachelor's degree at UTSA depends upon equivalency of such courses offered by UTSA. Other academic courses are transferred as electives; credit for these courses counts toward minimum degree requirements only if they satisfy requirements of the student's degree program. Credit is not given for duplication or repetition of courses.

All course requirements at UTSA designated as upper-division may be transferred to UTSA only from senior-level institutions. For credit to be transferred as an upper-division course, the institution where credit was earned must be an accredited senior-level institution, and the course must be described in the institution's catalog as being upper-division.

If the equivalent of a required upper-division UTSA course is completed at an accredited institution as a lower-division course, the course need not be repeated, but another upper-division course, approved by the student's advisor, must be completed at UTSA in substitution.

Credit by Examination

Credit by examination awarded at another accredited college or university transfers if the institution equates the results of the examination to a specific course, the course is transferable, and it appears on the institution's official transcript. Such credit is subject to all other transfer provisions, including the 66-semester-credit-hour transfer limitation from community colleges.

Accepted on a Limited Basis

Physical Activities Courses

Credits earned for physical activities courses can be transferred as free elective credit up to a maximum of 6 semester credit hours.

Extension or Correspondence Courses

Credit earned by extension or correspondence through accredited colleges and universities for college-level academic courses is evaluated and accepted for transfer if the course is equivalent to UTSA courses and acceptable to the student's degree program and if all other transfer provisions in this section are met. However, the maximum credit accepted through a combination of extension and correspondence courses is 30 semester credit hours (18-semester-credit-hour maximum by correspondence). No more than 6 semester credit hours of correspondence credit may be applied to the major.

Students currently enrolled at UTSA are not typically permitted to take correspondence or extension courses and transfer the credit to UTSA. Exceptions to this rule must be approved by the student's advisor and dean, and such courses can be taken only in the event that the student is about to graduate and cannot obtain the course in residence.

Community College Courses

Transfer credit for community college work may not exceed 66 semester credit hours. Students who have completed more than 66 acceptable semester credit hours may apply specific completed, transferable courses to specific course requirements to avoid having to repeat the courses. The semester credit hours for additional courses may not be applied toward the minimum semester credit hour requirements for a baccalaureate degree.

No upper-division credit may be earned at a community college.

Military Service Training School Courses

As a Serviceman's Opportunity College (SOC) institution, UTSA awards credit on a limited basis for military coursework. In order for credit to be awarded, a student submits to UTSA an official Army/American Council on Education Registry Transcript System (AARTS) or an official Sailor/Marine/Ace Registry Transcript (SMART) listing all military coursework completed. The Office of Admissions evaluates the transcript and determines the transferability of coursework. Credit is awarded for military coursework that is deemed parallel to academic coursework. Credit is not awarded for military experience based upon a Military Occupational Specialty (MOS) or for coursework that is solely technical in nature. Awarding of credit for military coursework does not guarantee its applicability to a degree at UTSA. A student who has taken military courses that do not transfer may challenge by examination those UTSA courses that appear equivalent to those already completed (see Challenging a UTSA Course (<http://catalog.utsa.edu/informationbulletin/generalacademicregulations/undergraduate/grades/#chall>) in "General Academic Regulations" of the *UTSA Information Bulletin*).

Credit for ROTC or military science, when awarded by another accredited college or university, is accepted by UTSA as free elective credit within the limitations of the student's degree program (for a maximum of 9 semester credit hours). See individual degree requirements and the ROTC program requirements in this catalog for limits on military science courses as free electives.

Credit for Military Service

An institution of higher education shall award to an undergraduate student who is admitted to the institution, including a student who is readmitted after withdrawing to perform active military service (Texas Education Code, Section 51.9242), course credit for all physical education courses required by the institution for an undergraduate degree and for additional semester credit hours, not to exceed 12, that may be applied to satisfy any elective course requirements for the student's degree program for courses outside the student's major or minor if the student:

1. graduated from a public or private high school accredited by a generally recognized accrediting organization or from a high school operated by the United States Department of Defense; and
2. is an honorably discharged former member of the armed forces of the United States who has completed at least two years of service in the armed forces or was discharged because of a disability.

Veterans entering UTSA as undergraduate students should meet with an academic advisor to discuss military service credit options, as elective credits may affect eligibility for the tuition rebate program and the Texas B-On-Time Loan forgiveness program or result in additional tuition for excess credit hours. Students must provide proof of eligibility (i.e., DD Form 214 or disability discharge documentation) to the academic advisor and complete the Military Service Credit Notice with the academic advisor. The Military Service Credit Notice is available on the Office of the Registrar's website (<http://www.utsa.edu/registrar>) and in the UTSA Veterans Certification Office (McKinney Humanities Building, Room 3.01.26).

Courses from an Institution Undergoing Accreditation or a Nonaccredited Institution

Credits earned in colleges and universities that are candidates for accreditation may be considered for transfer to UTSA on an individual basis and as applicable to the student's degree program. Any such credit accepted in transfer must be validated by 30 semester credit hours of coursework in residence at UTSA, with a grade point average of 2.0 or higher in that work.

UTSA reserves the right to refuse recognition of credit from a college or university that is a candidate for accreditation or from a nonaccredited institution.

Not Accepted ¹

Developmental Education, Orientation, Life Experience, High School Level, Below-Algebra Mathematics, or Vocational-Technical Courses

Credits for developmental education, orientation, life experience, high school level, mathematics below the college algebra level, or vocational-technical courses are not acceptable for transfer credit. Where vocational-technical courses support a student's degree program, the student may make a written request to the Dean of the college to approve

those courses as free elective credit. No transfer credit is granted for the General Educational Development (GED[®]) test.

1. Exception - Vocational-Technical Credits earned as part of an Associate of Applied Science degree from a regionally accredited school are accepted only for the Bachelor of Applied Arts and Sciences degree program.

Enrollment in Graduate Courses

For Undergraduate Credit

An undergraduate student with a cumulative grade point average of 3.0 or higher may enroll in a graduate course and apply the credits earned to an undergraduate degree after obtaining approval from the student's academic advisor, the instructor of the course, and the chair of the department offering the course. Approval forms are available on the Office of the Registrar website (<http://www.utsa.edu/registrar>). All approvals must be obtained and the form filed by the time of registration. Students are encouraged to begin collecting the appropriate authorizations before the start of the registration period.

For Graduate Credit

An undergraduate student with a cumulative grade point average of 3.0 or higher and lacking no more than 12 semester credit hours for graduation may enroll in a graduate course and earn graduate credit under the following conditions:

1. All hours required for the student's undergraduate degree must be completed in the term in which the graduate course is being taken.
2. In order to earn graduate credit, the student must graduate at the end of the semester in which the course is taken; otherwise, the course counts as undergraduate credit.
3. If graduate credit is earned, the semester credit hours are not considered part of the baccalaureate degree program.
4. The student must obtain permission from the student's academic advisor, the instructor of the course, and the chair of the department offering the course. Approval forms are available on the Office of the Registrar website (<http://www.utsa.edu/registrar>). The form must be filed by the time of registration. Students are encouraged to begin seeking appropriate authorizations before the registration period.

An undergraduate student with a cumulative grade point average of 3.0 or higher and lacking no more than 30 semester credit hours for graduation may enroll in a graduate course and earn graduate credit under the following conditions:

1. The student is in good academic standing in an accelerated bachelor's/master's degree program or is in good academic standing in the Honors College.
2. If graduate credit is earned, the semester credit hours are not considered part of the baccalaureate degree program.
3. The student must obtain permission from the student's academic advisor, the instructor of the course, and the chair of the department offering the course. Approval forms are available on the Office of the Registrar website (<http://www.utsa.edu/registrar>). The form must be filed by the time of registration. Students are encouraged to begin seeking appropriate authorizations before the registration period.

Graduation

Graduation Dates

Degrees are awarded at the end of each Fall, Spring, and Summer semester. Commencement ceremonies are held in December and May at the end of the Fall and Spring semesters. Undergraduate students who graduate at the end of the Summer Semester may participate in either the May or the December commencement ceremony.

Information regarding Graduation and Commencement is available on the Office of the Registrar website (<http://utsa.edu/registrar>).

Applying for the Degree

It is the student's responsibility to officially apply for his or her degree by submitting an Application for Graduation online through ASAP (<https://asap.utsa.edu>). Students must have earned at least 85 semester credit hours to apply online for graduation. Students must read and follow instructions carefully to ensure the application is accurate and successfully submitted. When the application has been accepted, students receive a confirmation number. Students having problems submitting the application should contact Graduation Coordination at graduationcoordination@utsa.edu.

While enrolled at UTSA, students who attend other colleges are required to submit official academic transcripts to the Office of Admissions from every college attended at the end of the semester during which coursework was undertaken, even if courses have been withdrawn. This includes concurrent enrollment while attending UTSA. Failure to do so may result in the rejection of the graduation application, cancellation of enrollment, permanent dismissal from UTSA, or other appropriate disciplinary action.

The following are deadlines for submitting an application for graduation:

- July 15 for Fall Semester graduation
- November 15 for Spring Semester graduation
- June 15 for Summer Semester graduation
 - Summer candidates wishing to participate in the May ceremony must apply by February 15.

Students applying to graduate with multiple degrees, majors, concentrations, and/or minors may not apply online; they must download and print the application from the Office of the Registrar website (<http://utsa.edu/registrar>), then submit the completed application to the Enrollment Services Center.

The student's assigned academic advisor is responsible for auditing the student's degree plan. Students must apply one semester prior to the intended graduation semester to ensure that all degree requirements are met. Students should contact his or her assigned academic advisor for more information.

If all University-wide and degree program requirements have been satisfied, an undergraduate student is not required to be registered for classes during the semester in which they apply for graduation.

If requested by a student, a Letter of Degree Completion is prepared by the student's assigned academic advisor after the close of the End of Term date of the semester in which all degree requirements have been met.

Degrees are posted to transcripts within 30 days of the End of Term date for the semester of graduation and diplomas are mailed within 45 days of the End of Term.

Degree Verification

Graduation verification is a two-step process.

1. The student's assigned academic advisor does a preliminary verification. The student is responsible for completing all coursework and submitting any or all of the following to his or her academic advisor **by the end of the term** (see the Academic Calendar for End of Term dates) in which graduation is expected:
 - Outstanding transcripts
 - CLEP, AP, and IB credit
 - Petitions or substitutions
 - Change of major/minor
 - Change of catalog
2. A final degree verification occurs once all grades are posted for the graduation semester; the degree plan is reviewed by the student's assigned academic advisor once again and the college Dean authorizes the certification for graduation.

Students who apply for the degree in a given semester but do not fulfill all requirements must file a new Application for Graduation on or before the appropriate deadline for the next semester in which they intend to graduate.

Applying for a Certificate

It is the student's responsibility to apply for his or her certificate by submitting a completed Application for Undergraduate Certificate to the Enrollment Services Center prior to the last day of the semester of graduation. The application form is located on the Office of the Registrar website (<http://utsa.edu/registrar>). Students with questions about the application should contact Graduation Coordination at graduationcoordination@utsa.edu.

Graduation with University Latin Honors

See the current issue of *UTSA Information Bulletin* (<http://catalog.utsa.edu/informationbulletin/generalacademicregulations/undergraduate/graduation>) for Graduation with University Latin Honors criteria.

Preprofessional Courses of Study in Law, Business, or Medicine

Students interested in legal, business, medical, dental, nursing or other health professions careers are encouraged to select undergraduate courses of study that comply with the specific program requirements of professional schools. Students planning to apply to graduate professional programs should consult UTSA faculty with experience in and knowledge of those professional fields. Students planning to apply to a health professions program should consult an advisor at the UTSA University Health Professions Office.

As a general guide, minimum requirements are set forth in this catalog. However, satisfactory completion of these minimums does not guarantee admission to any professional school or program. Specific professional

schools may have more specialized requirements, and the selection process for admission to professional schools is highly competitive.

Preparation for Law School

Students interested in preparing for and gaining admission to law school should contact the UTSA Institute for Law and Public Affairs or one of UTSA's pre-law faculty advisors. Most law schools do not recommend that pre-law students major in or concentrate on any particular area or discipline, although they do recommend that students acquire and develop certain skills as undergraduates, including strong analytical and writing skills. Most law schools say that a broad, diverse, liberal undergraduate education is preferable to one that is narrowly specialized or vocational. Many schools look for a showing of thorough, dedicated learning in a broad academic field. Student programs of study that approach subjects on a theoretical level, rather than concentrating exclusively on practical aspects, are often considered good preparatory training for law school. It is also advisable, however, for students to take some law-oriented courses at the undergraduate level to assess for themselves, and to demonstrate to law schools, their aptitude for legal studies and potential for success in law school.

To discover what a particular law school recommends, students should review that school's catalog or website. Students will find a wealth of information on law school admissions and preparation at the Law School Admission Council's website (<http://lsac.org>) and the UTSA Institute for Law and Public Affairs website (<http://www.utsa.edu/ilpa>). The Institute offers a minor in Legal Studies (LGS) and an intensive Summer Law School Preparation Academy that pre-law students may consider. Students who wish to discuss pre-law curriculum or their law school plans should contact the Institute. To declare a Minor in Legal Studies, contact the College of Liberal and Fine Arts Undergraduate Advising Center.

Preparation for Graduate Study in Business

Nonbusiness majors interested in pursuing a Master of Business Administration (M.B.A.) degree are encouraged to take business courses as electives which may result in some M.B.A. required leveling courses being waived. For more information, contact the advising office for the M.B.A. program (<http://business.utsa.edu/graduate>).

Preparation for Health Professions Programs

The University Health Professions Office (UHPO) provides advising and support to students interested in pursuing careers in the health professions. This includes academic preparation at the undergraduate level, as well as information about health careers, application procedures, and entrance exams. UTSA offers courses that fulfill entrance requirements to most health professions fields, including Medicine and Dentistry, Nursing, Dental Hygiene, Respiratory Therapy, Occupational Therapy, Physical Therapy, Physician Assistant, Pharmacy, Veterinary Medicine, Cytogenetics, Podiatry, Chiropractic, and Optometry. Admission to professional schools is highly competitive and involves a separate application process. Admission to UTSA does not guarantee

admission into health professions programs at The University of Texas Health Science Center at San Antonio (UTHSCSA).

Students are encouraged to seek advice and consult with the UHPO advising staff early in and throughout their college career. The UHPO is located at the Main Campus (Multidisciplinary Studies Building, Room 3.02.10). Advising is also available at the Downtown Campus on selected days and times throughout the academic year. For more information about the UHPO, including appointment and walk-in schedules, call 210-458-5185, or visit the website at <http://utsa.edu/healthprofessions/>.

Medical and Dental Schools

In general, medical and dental school admissions committees do not state a preference about an undergraduate major field, allowing the student to choose a degree program suited to the student's special abilities and interests. The vast majority of entrants have completed four years of college with a baccalaureate degree. In exceptional cases, students with outstanding records and a high degree of maturity are admitted to medical or dental school after completing 90 semester credit hours.

Admission requirements for Texas medical and dental schools are representative of admission requirements for most American medical schools. These requirements typically include one year of college English; two years of biology as required for college science majors (one year must include laboratory work); one year of physics as required for college science majors, including laboratory; one year of general chemistry and one year of organic chemistry as required for college science majors, including the corresponding laboratories; and one semester of college statistics.

Applicants to medical school must take the Medical College Admission Test (MCAT). It is to a student's advantage to take the test early—no later than June, preceding the senior year—and to begin preparation for the exam at least six months in advance. Similarly, applicants to dental school should take the Dental Admission Test (DAT) early—no later than June, preceding the senior year. The application cycle for both medical and dental schools begins in May for admission in August of the following year.

Applications for all Texas medical and dental schools, with the exception of Baylor College of Medicine, are processed by the Texas Medical and Dental Schools Application Service (TMDSAS), 702 Colorado Street, Suite 6.400, Austin, Texas 78701 (www.utsystem.edu/tmdsas/) (<http://www.utsystem.edu/tmdsas/>). Application services for other health professions schools as well as out-of-state medical and dental schools are: Osteopathic Medicine – American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS); Podiatric Medicine – American Association of Colleges of Podiatric Medicine Application Service (AACPMAS); Dentistry – Associated American Dental Schools Application Service (AADSAS); and Allopathic Medicine – American Medical College Application Service (AMCAS), which includes Baylor College of Medicine.

Nursing School

Admission requirements for The University of Texas Schools of Nursing are representative of admission requirements of most other American nursing schools. A minimum of 62 semester credit hours is required, including 6 semester credit hours of college English, 9 hours of behavioral sciences, 6 hours of each history and government, 3 hours of college mathematics, 3 hours of statistics, 3 hours of humanities, 3 hours of visual and performing arts, and 23 hours of natural sciences

which must include chemistry, anatomy, physiology, microbiology, and nutrition. Students interested in nursing must seek information about these prerequisites on a regular basis because they are subject to change.

Additional information and advisement may be obtained at the UHPO.

Early Admission Programs

Early Acceptance BSN: RN Program (EARN)

This 2+2 program offers outstanding UTSA students with an interest in nursing the opportunity to be granted early acceptance into the Bachelor of Science in Nursing (BSN) Program at the University of Texas Health Science Center San Antonio (UTHSCSA). Upon successful completion of the BSN program at UTHSCSA, students are eligible to take the Registered Nurse licensing examination. Admission to EARN is selective and limited. Students must meet with UHPO throughout their time at UTSA to review coursework and eligibility. Information about program requirements is available at the UHPO.

3-4 Dental Early Admission Program (DEAP)

This is a joint program between The University of Texas at San Antonio and The University of Texas Health Science Center at San Antonio Dental School. This program offers students with an interest in dentistry the opportunity to receive early conditional acceptance to the dental school and to earn both a Bachelor of Science degree in Biology at UTSA and a Doctor of Dental Surgery degree at UTHSCSA within seven years. Students must complete no more than 30 semester credit hours of coursework to apply to the program. A list of the requirements for acceptance into the program and for its completion, as well as application forms and procedures, are available in the UHPO.

Joint Admission Medical Program (JAMP)

The Joint Admission Medical Program was created by the Texas Legislature (Texas Education Code, § 51.821 et seq.) to provide services to “highly qualified, economically disadvantaged students” who want to be physicians. If selected for JAMP, a student will receive numerous benefits throughout college and into medical school: a scholarship each semester of college (beginning in the spring of the sophomore year); a stipend each summer to attend two medical school enrichment (internship) programs; mentoring throughout college and into medical school; and admission into a Texas medical school (if all requirements are met). Students must apply by September 1 of their sophomore year by which time they must have completed 27 hours of undergraduate credit during their freshman year and earned no less than a 3.25 grade point average. Contact the UHPO for more information and advisement and visit the JAMP website at www.utsystem.edu/JAMP/ (<http://www.utsystem.edu/JAMP/>) for additional details.

Preparation for Doctoral Programs

The Doctorate in Philosophy (Ph.D., PhD, or D.Phil.) degree is a postgraduate “doctoral” degree awarded primarily by universities and medical schools, in fields other than medicine, law and theology. Doctoral students take advanced coursework, engage in original scholarly research, and complete a final dissertation that demonstrates their intellectual contribution to their field. Someone who completes all requirements for the Ph.D. gains the right to be called “Doctor.”

Undergraduates interested in a Ph.D. should investigate the entry and application requirements for doctoral programs of interest and plan ahead. Some fields require a Master’s degree but others do not. Some Ph.D. programs may desire undergraduate courses that are not required for your UTSA degree but can be integrated into your degree plan. Undergraduate research experience is highly desirable and may be required by prestigious Ph.D. programs. Most programs require a standardized test such as the general GRE® (Graduate Record Exam), which should be taken so that results are available before application deadlines, which are frequently in late fall or early spring.

Students interested in doctoral training should consult with their discipline-specific academic advisor and UTSA research faculty in their field for further guidance. For additional general information about preparing for doctoral training or becoming involved in research as an undergraduate, please consult the websites of the UTSA Graduate School (<http://graduateschool.utsa.edu>) or Office of Undergraduate Research (<http://research.utsa.edu/UGresearch>).

Undergraduate Certificate Programs

Undergraduate certificate programs provide training opportunities for those students enrolled at UTSA as undergraduates. Certificate programs are narrower in scope and shorter in duration than baccalaureate degrees. Undergraduate certificate programs are neither “degree” programs nor teacher certification programs. Students wishing to be certified to teach at the elementary, middle school, or high school level should refer to the “Teacher Certification Programs for Undergraduate Students (p. 106)” page.

Currently, the following undergraduate certificate programs are offered:

- Certificate in Athletic Coaching offered by the Department of Kinesiology, Health, and Nutrition, College of Education and Human Development.
- Certificate in Business Analytics offered by the Department of Management Science and Statistics, College of Business
- Certificate in Data Center Design offered by the College of Engineering
- Certificate in Jazz Studies offered by the Department of Music, College of Liberal and Fine Arts.
- Certificate in Latin offered by the Department of Philosophy and Classics, College of Liberal and Fine Arts
- Certificate in Music Technology offered by the Department of Music, College of Liberal and Fine Arts.
- Certificate in Oil/Gas offered by the Department of Mechanical Engineering, College of Engineering
- Certificate in Operations and Supply Chain Management offered by the Department of Management Science and Statistics, College of Business
- Certificate in Pathogenic Outbreak Investigations offered by the Department of Information Systems and Cyber Security, College of Business, in collaboration with the Departments of Biology and Computer Science, College of Sciences

Admission Requirements

Undergraduates who are currently enrolled in baccalaureate degree programs or enrolled as non-degree-seeking students and who wish to earn undergraduate certificates are eligible to seek enrollment in undergraduate certificate programs. An undergraduate wishing to enroll in a certificate program should contact the Certificate Program Advisor and request permission to enter into the program. An approval is needed to enter into a certificate program and must be granted by the Certificate Program Advisor and the Dean of the college in which the certificate program is housed.

Students not currently admitted to UTSA who wish to earn undergraduate certificates will be required to apply for admission to UTSA as non-degree-seeking, special students at the undergraduate level, and indicate in the application process their desires to pursue the requirements for undergraduate certificates. Applicants will be required to meet University admission requirements for special students at the undergraduate level. After the student is admitted to UTSA as a special undergraduate, the student needs to contact the Certificate Program Advisor and request permission to enter into the certificate program. Approval to enter into a

certificate program must be granted by the Certificate Program Advisor and the Dean of the college in which the certificate program is housed.

Any student admitted to a certificate program without being currently enrolled in a baccalaureate degree program is considered a non-degree-seeking student. If such a student wishes to enter into a degree program, he or she will be required to reapply to UTSA as a degree-seeking undergraduate. Admittance into or completion of a certificate program is not considered to be qualification for admission as a degree-seeking undergraduate.

Students who are pursuing a certificate as non-degree-seeking students will not be eligible for financial aid or Veterans Administration educational benefits.

Graduate students may enroll in undergraduate certificate programs, provided they meet the requirements for enrollment in a graduate certificate program (see *UTSA Graduate Catalog*).

Certificate Requirements

Each undergraduate certificate program at UTSA must require a minimum of 15 semester credit hours, at least 9 of which must be at the upper-division level. Unless the certificate program specifically requires or permits a course to be taken at another institution, all courses that may be used to satisfy the requirements of an undergraduate certificate program must be college-level courses taken at UTSA.

Some courses required for undergraduate certificate programs may require certain prerequisite courses to adequately prepare students for the needed course. Before enrolling in any course required for a certificate program, students will be required to satisfy all the prerequisites for the course as listed in the course description.

In order to receive an undergraduate certificate from UTSA, a student must meet the following minimum requirements:

1. Complete all the requirements of the individual undergraduate certificate program.
2. Receive a grade of “C–” or better in each course used to satisfy the requirements of the individual undergraduate certificate program.
3. Achieve at least a 2.5 grade point average (on a 4.0 scale) in all courses used to satisfy the requirements of the individual certificate program.

The student’s Certificate Program Advisor will verify the completion of requirements. Upon completion of the certificate requirements or graduation from a degree-granting program offering the certificate—see specific program for details—the certificate will be recorded on the student’s undergraduate transcript.

It is the responsibility of the student to meet with the Certificate Program Advisor during the last semester of certificate coursework in order to verify that all requirements for completion are met. Students who complete a certificate program without completing a degree program do not receive a University diploma.

Applying for the Certificate

It is the student’s responsibility to apply for the certificate by submitting a completed Application for Undergraduate Certificate to the Enrollment Services Center prior to the last day of the semester of graduation. The application form is located at <http://utsa.edu/registrar/forms.html>.

Students with questions about the application should contact Graduation Coordination at graduationcoordination@utsa.edu.

College of Architecture, Construction and Planning

The College of Architecture, Construction and Planning offers three undergraduate degrees focused on various aspects of the built environment. The Department of Architecture houses the Bachelor of Science degree in Architecture and the Bachelor of Science degree in Interior Design. The Department of Construction Science houses the Bachelor of Science degree in Construction Science and Management. The College also includes undergraduate courses in Urban and Regional Planning. The College faculty are a very diverse group of scholars and practitioners. Among them are well-recognized educators, scholars, and designers who have achieved national and international recognition for their research, publications, and professional practices.

The CACP International Studies / Signature Experience Requirement

All undergraduate students in the College of Architecture, Construction and Planning (CACP) are required to participate in an approved International Studies / Signature Experience opportunity as a condition of graduation. The CACP International Studies / Signature Experience requirement is intended to expose students to educational opportunities that go beyond the traditional academic experience. Participation in International Studies is the primary means to satisfy the requirement. Construction Science and Management majors satisfy the requirement by completing a required internship for their degree program. In rare cases, Architecture and Interior Design majors unable to participate in an International Studies program may petition the College, through the Department, for a waiver. Such waivers are reviewed by the Dean on a case-by-case basis and, if approved, allow participation in an alternative Signature Experience. Students are advised to consult the College website (<http://cacp.utsa.edu>) or the Associate Dean for Academic Affairs and Undergraduate Studies for up-to-date International Studies and Signature Experience opportunities, applications, waivers, approval processes and forms.

Department of Architecture

The Department of Architecture offers the Bachelor of Science degree in Architecture and a Bachelor of Science degree in Interior Design. Both degree programs include a common Foundation Year of studies and students remain as pre-majors until the completion of the Foundation Year required coursework and successful passage through the Foundation Year Gateway.

Admission Criteria for Transfer Students

Students who wish to transfer from another institution into either of the two undergraduate degree programs (Architecture or Interior Design) in the Department of Architecture are required to submit an Application Package that includes their cumulative grade point average, and a letter of interest. Students with architectural or interior design coursework beyond the freshman level are required to submit a portfolio of studio work (bound, maximum size 8.5 inches by 11 inches) that will be used for studio placement. Students wishing to apply for transfer course substitutions will be required to submit course syllabi for those courses for

Departmental review. Application packages and portfolios should be sent directly to the Department of Architecture. Transfer applicants placed into the first year will be required to complete the Foundation Year Program and apply for either the Architecture or Interior Design major as described below.

Change of Major

Students currently enrolled in UTSA who wish to change majors to one of the two undergraduate academic majors within the Department of Architecture must submit a Change of Major application to the Department of Architecture by the first Monday in May. Departmental application decisions are made at least once per year in June, but the Department reserves the right to render decisions at any time. Change of major students must include their grade point average and a letter of interest in their application package. Students with architectural or interior design coursework beyond the freshman level are required to submit a portfolio of studio work (bound, maximum size 8.5 inches by 11 inches) that will be used for studio placement. Students wishing to apply for course substitutions will be required to submit course syllabi for those courses for Departmental review. Portfolios should be sent directly to the Department of Architecture. Change of Major applicants placed into the first year will be required to complete the Foundation Year Program and apply for either the Architecture or Interior Design major as described below.

Foundation Year Program (FYP) / Admission to the Major in Architecture or Interior Design

Students must successfully complete the common Foundation Year Program (FYP), consisting of 16 semester credit hours, in order to be eligible to apply for the FYP Gateway review process and subsequent admission into either the Bachelor of Science in Architecture major (ARC) or Bachelor of Science in Interior Design major (IDE). Students are strongly advised to complete the additional 15 credit hours of Core Curriculum courses in their first year of studies as well.

Students who have completed the FYP must submit a Gateway Application (an application to the major) by the first Monday in May for review and consideration for admission to the major of choice (ARC or IDE). Applications are available on the Department website. FYP Gateway reviews are conducted at the conclusion of each Spring semester. Available openings within both the ARC and IDE majors are limited and, therefore, entry into each is competitive. Students not accepted into either of the two majors within the Department of Architecture in their first year of application will remain in the University College and will be eligible to reapply the following year. A student may reapply only once.

The Foundation Year Program *requires* the completion of the following courses (16 semester credit hours):

ARC 1113	Introduction to the Built Environment	3
ARC 1214	Design I	4
ARC 1223	Design II	3
ARC 1313	Design Visualization	3
ARC 1513	Great Buildings and Cities of the World	3
Total Credit Hours		16

The Foundation Year Program strongly *recommends* the completion of the following Core Curriculum courses (15 semester credit hours):

AIS 1203	Academic Inquiry and Scholarship	3
WRC 1013	Freshman Composition I (Q)	3
WRC 1023	Freshman Composition II (Q)	3
Mathematics Core Course (MAT 1023 or MAT 1033)		3
Life and Physical Sciences Core Course (ES 2013, GEO 1013, GRG 2613, or PHY 1943)		3
Total Credit Hours		15

Laptop Program

The Laptop program requires that students entering both the Bachelor of Science in Architecture and Bachelor of Science in Interior Design programs have their own laptop (notebook) computers and required software. Digital technology will be integrated into the studio work and will be necessary in order to fulfill project requirements. The computer should be upgradeable in order to be of productive use for the duration of the academic program.

Student Work

The Department of Architecture reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for grading is the property of the College of Architecture, Construction and Planning and remains such until it is returned to the student.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

- The Bachelor of Science degree in Architecture (p. 20)
- The Bachelor of Science degree in Interior Design (p. 22)

Bachelor of Science Degree in Architecture

The Bachelor of Science (B.S.) in Architecture is a four-year pre-professional degree. The minimum number of semester credit hours required for the degree, including Core Curriculum requirements, is 121, at least 39 of which must be at the upper-division level. Students are advised to complete the B.S. in Architecture coursework in the order indicated in the "Recommended Curriculum" issued by the Department of Architecture for their catalog year.

The B.S. in Architecture is a program that provides students with the opportunity to prepare for the continuation of studies in a professional graduate program to earn a Master of Architecture (M. Arch.) degree. Completion of the B.S. in Architecture degree allows the graduate to pursue limited architectural practice but does not, in itself, fully prepare the graduate for architectural licensure. Students in the B.S. in Architecture program are advised that the certification for architectural registration and professional practice by the National Council of Architectural Registration Boards (NCARB) requires, in virtually all cases, an accredited professional degree and broad architectural education such as that provided by the Master of Architecture (M. Arch.) program at UTSA.

In the United States, most registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit professional degree programs in architecture offered by institutions with U.S. regional accreditation,

recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may require a preprofessional undergraduate degree in architecture for admission. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

University of Texas San Antonio, Department of Architecture offers the following NAAB-accredited degree programs:

M. Arch 2 (preprofessional degree + 52 graduate credits)

M. Arch 3 (non-preprofessional degree + 91 credits)

Next accreditation visit for all programs: 2016

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Architecture must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy Core Curriculum requirements, see below.

MAT 1023¹, MAT 1033, MAT 1073, or MAT 1093 may be used to satisfy the core requirement in Mathematics.

Two of the following courses should be used to satisfy the core requirement in Life and Physical Sciences: ES 2013, GEO 1013, GRG 2613², or PHY 1943.

In addition to AIS 1203, ARC 1113 should be used to satisfy the core requirement in Language, Philosophy and Culture. ARC 1214 should be used to satisfy the core requirement in Creative Arts. ARC 1513 should be used to satisfy the Component Area Option requirement.

ANT 1013, ECO 2003, EGR 1343, GRG 1013, GRG 2623, or SOC 1013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

- ¹ Students who may anticipate either a dual major with CSM or change of major to the CSM program should note that MAT 1023 will not count toward the CSM degree.
- ² Students who may anticipate either a dual major with CSM or change of major to the CSM program should note that GRG 2613 will not count toward the CSM degree and PHY 1943 will be required.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Architecture must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts,

including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ARC 2133	Principles of Architectural Structures
ARC 2156	Drawing and Modeling Studio
ARC 2166	Digital Design Studio
ARC 2233	Principles of Environmental Systems

Degree Requirements

A. Foundation Year Program

1. 16 semester credit hours of required courses completed with a grade of "C-" or better in each course

ARC 1113	Introduction to the Built Environment	3
ARC 1214	Design I	4
ARC 1223	Design II	3
ARC 1313	Design Visualization	3
ARC 1513	Great Buildings and Cities of the World	3

B. Architecture Program sequence

1. 42 semester credit hours of required architectural courses. Must be completed with a grade of "C-" or better in each course:

ARC 2133	Principles of Architectural Structures	3
ARC 2156	Drawing and Modeling Studio	6
ARC 2166	Digital Design Studio	6
ARC 2233	Principles of Environmental Systems	3
ARC 2413	History of Architecture I	3
ARC 2423	History of Architecture II	3
ARC 3433	Topics in Architecture and Thought	3
ARC 3553	Introduction to Architectural Theory	3
ARC 3613	History of Modern Architecture	3
ARC 4183	Environmental Systems	3
ARC 4283	Architectural Structures	3
CSM 2113	Construction Materials and Methods	3

2. 24 semester credit hours of required upper-division design studios. 24 Must be completed with a grade of "C-" or better in each course

ARC 4156	Building Design Studio (repeated)	6
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3. 6 semester credit hours of electives

It is recommended that these electives be satisfied as a part of the International Studies coursework

Total Credit Hours **88**

B.S. in Architecture – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
Foundation Year (Pre-Architecture/PRA)		
AIS 1203	Academic Inquiry and Scholarship (core)	3
ARC 1113	Introduction to the Built Environment (core and major)	3
ARC 1214	Design I (core and major)	4
ARC 1313	Design Visualization	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
ARC 1223	Design II	3

ARC 1513	Great Buildings and Cities of the World (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Mathematics Core		3
Life & Physical Sciences Core		3
GATEWAY TO MAJOR (Requires Application and Acceptance)		

Second Year

Fall

ARC 2133	Principles of Architectural Structures	3
ARC 2413	History of Architecture I	3
ARC 2156 or 2166	Drawing and Modeling Studio (or Digital Design Studio)	6
CSM 2113	Construction Materials and Methods	3

Spring

ARC 2166 or 2156	Digital Design Studio (or Drawing and Modeling Studio)	6
ARC 2233	Principles of Environmental Systems	3
ARC 2423	History of Architecture II	3
Social and Behavioral Sciences Core		3

Third Year

Fall

International Studies Semester (Fall or Spring)		
ARC 4816	International Studies Studio	6
ARC 4823	International Studies Theory Seminar	3
ARC 4833	International Studies Drawing Seminar	3
ARC 4843	International Studies History Seminar	3

Spring

Non-International Studies Semester 1		
ARC 3613	History of Modern Architecture	3
ARC 4156	Building Design Studio	6
American History Core		3
Government-Political Science Core		3

Non-International Studies Semester 2 (Fall or Spring) ¹

ARC 4156	Building Design Studio	6
ARC 3553	Introduction to Architectural Theory	3
Elective		3
Elective		3

Fourth Year

Fall

ARC 3433	Topics in Architecture and Thought	3
ARC 4156	Building Design Studio	6
ARC 4183	Environmental Systems	3
Government-Political Science Core		3

Spring

ARC 4156	Building Design Studio	6
ARC 4283	Architectural Structures	3
American History core		3

Life & Physical Sciences core	3
Total Credit Hours:	121.0

- ¹ Non-International Studies Semester 2 is only for students who receive a waiver from the International Studies Requirement.

Bachelor of Science Degree in Interior Design

The Bachelor of Science (B.S.) in Interior Design is a four-year Council for Interior Design Accreditation (CIDA) accredited professional degree. The minimum number of semester credit hours required for the degree, including Core Curriculum requirements, is 124, at least 42 of which must be at the upper-division level. Students are advised to complete the B.S. in Interior Design degree coursework in the order indicated within the "Recommended Curriculum" issued by the College of Architecture, Construction and Planning for their catalog year.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Interior Design must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy Core Curriculum requirements, see below.

MAT 1023¹, MAT 1033, MAT 1043¹, MAT 1073, or MAT 1093 may be used to satisfy the core requirement in Mathematics.

Two of the following courses should be used to satisfy the core requirement in Life and Physical Sciences: ES 2013, GEO 1013, GRG 2613², or PHY 1943.

In addition to AIS 1203, ARC 1113 or ARC 1413 should be used to satisfy the core requirement in Language, Philosophy and Culture. ARC 1214 should be used to satisfy the core requirement in Creative Arts. ARC 1513 should be used to satisfy the Component Area Option requirement.

ANT 1013, ECO 2003, EGR 1343, GRG 1013, GRG 2623, or SOC 1013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

- ¹ Students who may anticipate either a dual major with CSM or change of major to the CSM program should note that MAT 1023 and MAT 1043 will not count toward the CSM degree.
- ² Students who may anticipate either a dual major with CSM or change of major to the CSM program should note that GRG 2613 will not count toward the CSM degree and PHY 1943 will be required.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Interior Design must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts,

including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ARC 2156	Drawing and Modeling Studio
ARC 2166	Digital Design Studio
IDE 2143	Architecture and Interior Assemblies
IDE 2153	Interior Materials and Assemblies

Degree Requirements

A. Foundation Year Program

16 semester credit hours of required courses completed with a grade of "C-" or better in each course:

ARC 1113	Introduction to the Built Environment	3
ARC 1214	Design I	4
ARC 1223	Design II	3
ARC 1313	Design Visualization	3
ARC 1513	Great Buildings and Cities of the World	3

B. Interior Design Program sequence

1. 69 semester credit hours of required courses completed with a grade of "C-" or better in each course:

ARC 2133	Principles of Architectural Structures	3
ARC 2156	Drawing and Modeling Studio	6
ARC 2166	Digital Design Studio	6
ARC 2233	Principles of Environmental Systems	3
ARC 4183	Environmental Systems	3
IDE 2143	Architecture and Interior Assemblies	3
IDE 2153	Interior Materials and Assemblies	3
IDE 2413	History of Interior Architecture I	3
IDE 2423	History of Interior Architecture II	3
IDE 3133	Interior Design Topics	3
IDE 3203	Details and Construction Graphics	3
IDE 3236	Interior Design Studio I	6
IDE 3246	Interior Design Studio II (Alternative Signature Experience studio)	6
IDE 3433	Topics in Design Theory	3
IDE 4266	Systems Integration Studio	6
IDE 4513	Practice and Ethics	3
IDE 4816	International Studies Studio	6

2. 6 semester credit hours of electives 6

It is recommended that these electives be satisfied as a part of the International Studies coursework.

Total Credit Hours 91

B.S. in Interior Design – Recommended Four-Year Academic Plan

First Year

Fall	Credit Hours
(Pre-Interior Design/PRI)	
AIS 1203	Academic Inquiry and Scholarship (core) 3
ARC 1113	Introduction to the Built Environment (core) 3
ARC 1214	Design I (core and major) 4
ARC 1313	Design Visualization 3

WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
WRC 1023	Freshman Composition II (Q) (core)	3
ARC 1223	Design II	3
ARC 1513	Great Buildings and Cities of the World (core)	3
Mathematics Core		3
Life & Physical Sciences Core		3
GATEWAY TO MAJOR (Requires Application and Acceptance)		
Second Year		
Fall		
ARC 2133	Principles of Architectural Structures	3
ARC 2156 or 2166	Drawing and Modeling Studio (or Digital Design Studio)	6
IDE 2143	Architecture and Interior Assemblies	3
IDE 2413	History of Interior Architecture I	3
Spring		
ARC 2166 or 2156	Digital Design Studio (or Drawing and Modeling Studio)	6
ARC 2233	Principles of Environmental Systems	3
IDE 2153	Interior Materials and Assemblies	3
IDE 2423	History of Interior Architecture II	3
Social and Behavioral Sciences Core		3
Third Year		
Fall		
ARC 4183	Environmental Systems	3
IDE 3236 or 4816	Interior Design Studio I (or International Studies Studio)	6
IDE 3203	Details and Construction Graphics	3
IDE 3133	Interior Design Topics	3
Spring		
IDE 4816 or 3236	International Studies Studio (or Interior Design Studio I) ¹	6
IDE 4823	International Studies Theory Seminar ¹	3
IDE 4833	International Studies Drawing Seminar ¹	3
Summer		
International Studies/Signature Experience		12
(1) International Studies courses may be taken during the summer (study abroad), if so, core courses and IDE 3246 may be taken during Third Year, Spring.		
Fourth Year		
Fall		
IDE 3246 or 4266	Interior Design Studio II (or Systems Integration Studio)	6
IDE 3433	Topics in Design Theory	3
American History Core		3
Government-Political Science Core		3
Spring		

IDE 4266 or 3246	Systems Integration Studio (or Interior Design Studio II)	6
IDE 4513	Practice and Ethics	3
American History Core		3
Government-Political Science Core		3
Life and Physical Sciences Core		3
Total Credit Hours:		124.0

Department of Construction Science

The Department of Construction Science offers a Bachelor of Science degree in Construction Science and Management.

Admission to the Major in Construction Science and Management

Available openings within the Construction Science and Management Program (second to fourth year courses) are limited and, therefore, entry is competitive. Successful applicants entering the University from high school and transfer students will be directly admitted, as a pre-major, into the University College. At the completion of 30 credit hours of coursework, students may apply to the Construction Science and Management major. Applications will be reviewed at the end of each academic semester and students will be accepted to the major based on their grade point average (GPA) and number of available seats. Students who wish to transfer from another institution, or are currently enrolled in UTSA but wish to change their major, may apply to the major directly if they have more than 30 credit hours. The transfer and change of major applications will be reviewed at the end of each academic semester and students will be accepted to the major based on their GPA and number of available seats. Pre-CSM majors will be given preference in the application review.

Laptop Program

Students must have a laptop (notebook) computer upon entering the program. The computer should be upgradeable in order to be of productive use for the duration of the academic program.

Student Work

The Department of Construction Science reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for grading is the property of the College of Architecture, Construction and Planning and remains such until it is returned to the student.

Bachelor of Science Degree in Construction Science and Management

The Construction Science and Management degree combines courses in construction science, design and business to educate managers for the construction industry. The minimum number of semester credit hours required for the degree, including Core Curriculum requirements, is 120, at least 39 of which need to be at the upper-division level. Students obtaining a Bachelor of Science (B.S.) degree in Construction Science and Management pursue management careers in a wide variety of occupations throughout the construction industry. The degree also

provides students with the opportunity to continue with their studies in a graduate program.

The curriculum prepares students to manage the construction process on the job site and effectively interact with architects, engineers, owners and other professionals who compose the team required by the complexities of modern construction projects. Project owners recognize the need for timely project delivery, indoor/outdoor environmental quality, and short-term and life-cycle costing. Therefore, the curriculum emphasizes environmentally sustainable building practice, project and cost controls, communication skills, understanding the technical aspects of construction and the construction process, and the application of information technology to the construction industry. In addition to the formal academic curriculum, students are required to complete a construction management internship in the building industry between their junior and senior years. The program maintains a close partnership with the construction industry to provide graduates with various opportunities.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Construction Science and Management must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy Core Curriculum requirements, see below.

Students are strongly encouraged to complete WRC 1013, WRC 1023, MAT 1033 or MAT 1073, and PHY 1603 in their first year.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics (select one of the following)	3
MAT 1033 Algebra with Calculus for Business	
MAT 1073 Algebra for Scientists and Engineers	
Life and Physical Sciences (select two of the following)	6
ES 2013 Introduction to Environmental Systems I	
ES 2023 Introduction to Environmental Systems II	
GEO 1013 The Third Planet	
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences (select one of the following)	3
ECO 2013 Introductory Macroeconomics	
ECO 2023 Introductory Microeconomics	
Component Area Option	3
COM 2113 Public Speaking	
Total Credit Hours	42

Degree Requirements

A. Construction Science and Management Program sequence. Must be completed with a grade of "C–" or better in each course

1. Required courses in design, construction science, and project management		
CSM 2113	Construction Materials and Methods	3
CSM 2143	Construction Materials and Testing	3
CSM 3113	Construction Surveying	3
CSM 3123	Technical Communication	3
CSM 3143	Structures I	3
CSM 4013	Construction Estimating I	3
CSM 4023	Construction Estimating II	3
CSM 4143	Structures II	3
CSM 4513	Project Management	3
CSM 4523	Project Planning and Scheduling	3
CSM 4533	Building Information Modeling for Construction Management	3
CSM 4613	Sustainable Building Practice	3
CSM 4623	Construction Safety	3
CSM 4633	Construction Law	3
CSM 4643	Mechanical, Electrical and Plumbing Systems	3
CSM 4713	Construction Capstone	3
CSM 4933	Summer Internship	3
2. Required business and related courses:		
ACC 2013	Principles of Accounting I	3
BLW 3013	Business Law	3
FIN 3003	Survey of Finance	3
GBA 2013	Social and Ethical Issues in Business	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
3. One course in physics:		
PHY 1603	Algebra-based Physics I	3
4. One course in statistics:		
STA 1053	Basic Statistics	3
B. Two prescribed electives selected from the following list with a grade of "C–" or better in each course		
CSM 2323	Construction Documents	
CSM 2333	Construction Culture and History	
CSM 4943	Internship I	
CSM 4953	Special Studies in Construction Science and Management	
SPN 2023	Intermediate Spanish II	
SPN 3153	Spanish for the Business/Management Fields	
MKT 3013	Principles of Marketing	

Total Credit Hours **78**

B.S. in Construction Science and Management – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3

MAT 1033 or 1073	Algebra with Calculus for Business (core)	3	POL 1133 or 1213	Texas Politics and Society (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3		Prescribed Elective	3
	American History (core)	3		Prescribed Elective	3
	Language Philosophy and Culture (core)	3			
	Spring				
WRC 1023	Freshman Composition II (Q) (core)	3			
PHY 1603	Algebra-based Physics I	3			
	American History (core)	3			
	Creative Arts (core)	3			
	Physical Science Elective (core)	3			
	Second Year				
	Fall				
ACC 2013	Principles of Accounting I	3			
CSM 2113	Construction Materials and Methods	3			
CSM 3123	Technical Communication	3			
ECO 2013 or 2023	Introductory Macroeconomics (core)	3			
	Physical Science Elective (core)	3			
	Spring				
CSM 2143	Construction Materials and Testing	3			
CSM 4013	Construction Estimating I	3			
COM 2113	Public Speaking (core)	3			
GBA 2013	Social and Ethical Issues in Business	3			
STA 1053	Basic Statistics	3			
	Third Year				
	Fall				
BLW 3013	Business Law	3			
CSM 3143	Structures I	3			
CSM 4023	Construction Estimating II	3			
CSM 4513	Project Management	3			
CSM 4533	Building Information Modeling for Construction Management	3			
	Spring				
CSM 4143	Structures II	3			
CSM 4523	Project Planning and Scheduling	3			
CSM 4623	Construction Safety	3			
CSM 4643	Mechanical, Electrical and Plumbing Systems	3			
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3			
	Summer				
CSM 3113	Construction Surveying	3			
CSM 4933	Summer Internship	3			
	Fourth Year				
	Fall				
CSM 4613	Sustainable Building Practice	3			
CSM 4633	Construction Law	3			
FIN 3003	Survey of Finance	3			
POL 1013	Introduction to American Politics (core)	3			
	Spring				
CSM 4713	Construction Capstone	3			
				Total Credit Hours:	120.0

College of Business

Mission Statement

The College of Business is dedicated to creating and sharing knowledge that enhances the translation of theory to practice. The College combines rigor with relevance and provides innovative solutions to global business challenges.

General Information

The College of Business welcomes all students dedicated to academic success in the study of business. The College is accredited by AACSB (Association to Advance Collegiate Schools of Business) International and is one of only 75 programs internationally with separate accreditation at the undergraduate, master's and doctoral levels in accounting. With 17 majors and 18 minors in the undergraduate program, the College of Business seeks to give students a competitive edge in obtaining and securing employment.

The College offers comprehensive career preparation and services provided through the Center for Student Professional Development (CSPD). The CSPD is devoted to transforming business students into business professionals and to meeting the recruitment needs of employers locally and globally. The Center enhances the business curriculum by helping students build the skills and knowledge that will help them be more confident and polished when they enter the business world. Workshops and events are woven into the academic curriculum of the College.

The College of Business offers a wide variety of programs on campus and abroad to develop students' international business skills. On-campus programs include the Global Business Club for networking and career development. International faculty come to campus each semester and provide lessons for success in diverse cultures. For travel study, the College offers traditional and innovative programs to fit different student needs. Traditional study abroad programs are offered for students who want to spend a semester studying in a foreign country. The College of Business faculty also takes groups of students for international immersion study at locations where they meet executives, take classes and experience an international culture for themselves. Students who participate in College of Business international programs will develop skills to help them succeed in business anywhere in the world.

The Leadership Challenge program, in partnership with the Honors College, provides high-achieving students, primarily in business-related disciplines, with an opportunity to explore and enhance their leadership skills and capacities. Admission to this program is highly competitive, based on academic achievement, extracurricular activities, faculty nominations and personal interviews. The program is housed in the College of Business's Center for Professional Excellence. Class selection occurs each Spring Semester for the program, which spans the following Fall and Spring semesters. The program involves participation in experiential activities, dialogues, reflective writing and a community service project. Honors College students are required to register for 1 semester credit hour (HON 4941) in the Fall Semester, and for 3 semester credit hours (MGT 4953) in the Spring Semester. Non-Honors students have the option of registering for 1 semester credit hour in the Fall (MGT 4951), but are required to register for 3 semester credit hours (MGT 4953) in the Spring.

Students in the College of Business may not enroll in specified 3000- and 4000-level courses in the College of Business before declaring a major.

Students with majors outside of the College of Business may not seek more than one business minor.

College of Business Undergraduate Admission Policy for the Bachelor of Business Administration Degree

Admissions Philosophy

The College of Business (COB) at UTSA seeks to use available resources in ways that best prepare as many qualified students as possible for careers in business. Because there are many more students interested in the study of business than the College has resources for, the undergraduate admission policy gives all interested students a specified time to show they can succeed in the College of Business. Students who meet admission requirements may declare their B.B.A. major. Students who do not meet the requirements for declaration of a B.B.A. major are not admitted to the College but may complete requirements for any other major at UTSA for which they are eligible. A business minor is available to all UTSA students who seek a strong foundation in business.

Qualifying as a Prebusiness Student

All students seeking to be Prebusiness (PRB) must:

- have successfully completed evaluation under the Texas Success Initiative (TSI), and
- qualify for enrollment in MAT 1033 Algebra with Calculus for Business or a higher level mathematics course, and
- qualify for enrollment in WRC 1013 Freshman Composition I (Q) or higher

Students who do not meet the criteria above will be classified as undeclared until they are college-ready in math and English. Undeclared students may not register for any College of Business courses until they qualify to be PRB.

Gateway Course

Students pursuing a Bachelor of Business Administration degree (B.B.A.) must successfully complete MAT 1033 Algebra with Calculus for Business, the Gateway Course, with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major outside of business.

Admission to the College of Business

As of Fall 2015, all students seeking admission to the College of Business must meet the requirements of the College of Business as set forth in this catalog. To declare a B.B.A. major, students must be designated as prebusiness. Prebusiness students must complete a total of seven required courses – 21 semester credit hours including 15 business credit hours.

In the semester that a prebusiness student completes the 15 required business hours, he/she will be evaluated for admission to the College of Business. The **15-hour rule** requires that by the time students complete their 15th business hour, they must have taken the required

two nonbusiness courses and the required five business courses from List 1. If any of the required business courses have been completed prior to entering UTSA, students must take additional business courses at UTSA from List 2 in order to meet the 15-hour rule. Students who earn 15 business hours without completing List 1 forfeit their chance to be evaluated for admission to the College of Business and they must choose another major outside of business.

The size of the newly admitted class is decided by the College each semester and is determined by the available enrollment capacity, and the size and quality of the application pool. Therefore, admission to the UTSA College of Business **is not guaranteed**.

Students will have one chance to be evaluated for admission once they earn 15 business hours. At that time they must have completed the required seven courses (five business and two nonbusiness courses) and they will be admitted based on their UTSA and COB grade point averages (GPAs), students with the highest GPAs being admitted first until the incoming class is filled. The UTSA GPA includes all courses taken at UTSA. The COB GPA includes only business courses taken at UTSA.

Admissions decision will be sent to the email address on file with the university.

Students who are not admitted to the college in the semester they are evaluated are not eligible to complete a bachelor's degree in business at UTSA. They will be changed from Prebusiness (PRB) to Undeclared (UND) and may select any nonbusiness major for which they qualify.

Students who complete 15 hours in business without completing the required courses for admission will no longer be candidates for the College of Business. Students will be changed from Prebusiness (PRB) to Undeclared (UND) and must choose a major other than a business discipline.

Non-admitted students may elect to complete a business minor approved for nonbusiness students and will only be permitted to take additional business courses that are required for these minors

Required Courses for COB Admission – List 1

MAT 1033	Algebra with Calculus for Business (or equivalent or higher course with grade of "C-" or better. MAT 1214 Calculus I for majors in Actuarial Science, grade of "C-" or better.)	3
WRC 1013	Freshman Composition I (Q) (grade of "C-" or better)	3
ACC 2013	Principles of Accounting I (grade of "C-" or better)	3
ECO 2013	Introductory Macroeconomics (grade of "C-" or better)	3
ECO 2023	Introductory Microeconomics (grade of "C-" or better)	3
IS 1403	Business Information Systems Fluency (grade of "C-" or better)	3
MS 1023	Business Statistics with Computer Applications I (grade of "C-" or better. STA 3023 Statistical Mathematics for majors in Actuarial Science, grade of "C-" or better.)	3

If any of the required business courses have been completed prior to entering UTSA, students must take additional business courses at UTSA from List 2 below in order to meet the **15-hour rule**. Students who begin

courses on List 2 before completing List 1 and reach 15 business hours will forfeit their right to be evaluated for admission to the College of Business.

Required courses for COB Admission – List 2. (May be selected *only after* List 1 courses are completed.)

ACC 2033	Principles of Accounting II	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 3003	Principles of Information Systems for Management	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MKT 3013	Principles of Marketing	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Declaration of Major Policy for the Bachelor of Arts in Economics and the Bachelor of Science in Statistics

Students seeking a B.A. in Economics or a B.S. in Statistics must have a 2.0 UTSA GPA and transfer students must have a 2.0 transfer GPA to declare the major. Declaration of major forms may be submitted to the student's primary academic advisor. Students seeking these degrees are subject to the academic standing policy of the College of Business.

Academic Standing for Declared Business Majors

College of Business majors (B.B.A. degrees, B.A. degree in Economics and B.S. degree in Statistics) must maintain good academic standing. This requires that the student maintain a UTSA grade point average of at least 2.0 every semester and meet all University regulations related to good academic standing. Students on probation with UTSA may remain in the College of Business, however, students who are dismissed from UTSA for low academic performance may not return to the College of Business. If the student chooses to return to UTSA, the student must select a new major outside of business.

In order to graduate, all College of Business majors must be in good academic standing (i.e., students must maintain a UTSA, College of Business, and Major GPA of 2.0).

Business Honors

Bachelor of Business Administration (B.B.A.) majors who have been admitted to the Honors College may earn Business Honors if they maintain a minimum UTSA grade point average of 3.25 and complete an Honors section of five of the following Common Body of Knowledge courses: ACC 2013, ACC 2033, ECO 2013, ECO 2023, FIN 3014, GBA 2013, IS 3003, MGT 3013, MGT 4893, MKT 3013, MS 1023, and MS 3043. Certain 5003-numbered courses in the M.B.A. degree program may, subject to approval, substitute for Common Body of Knowledge courses. These undergraduate courses are offered once per year, and enrollment is targeted for B.B.A. degree program majors seeking

University Honors. Contingent upon available space, students with outstanding academic records, including exceptional freshmen and transfer students, can apply for admission into these classes subject to approval by the faculty member, department chair, and Dean of the College of Business. Honors classes emphasize class discussion, presentations, and business research.

Scholarships

The College of Business has many scholarships available to assist students in reaching their educational and career goals. The scholarship program within the College is managed generally by the College of Business Office of the Dean. Students should visit the College of Business website for information and application procedures for all scholarships within the College. Detailed information and eligibility requirements for specific scholarships administered through the College are available at <http://business.utsa.edu/undergraduate/>. Other scholarship information is available through the UTSA Scholarship Office. The number and amounts of scholarship awards vary. Additionally, scholarship eligibility requirements differ, but may include considerations of grade point average, financial need, number of semester credit hours completed, enrollment status, activities, residency status, or bilingualism. Students must complete the application process and submit required documentation by the deadlines stated on application materials. Students will be considered for all awards for which they meet the eligibility criteria. Award amounts are generally disbursed equally among the semesters covered by the scholarship as long as recipients continue to meet grade point average, enrollment, and other scholarship criteria.

Minors in the College of Business

The following College of Business minors are open to any UTSA major: Actuarial Science; Adaptive Decision Models for Business; Statistics; Digital Forensics; Economics; Entrepreneurship-Nonbusiness; Cyber Security; Information Systems; Network and Data Center Management; and Management Science.

Students with majors outside of the College of Business may not seek more than one business minor.

The following College of Business minors are open to B.B.A. majors only: Entrepreneurship; Finance; International Management; Management; Marketing; and Real Estate.

The following College of Business minors are open to nonbusiness majors, B.A. in Economics majors, and B.S. in Statistics majors only: Business Administration and Technology Management.

The following College of Business minors are open only to students pursuing the B.B.A. in Real Estate Finance and Development: Construction Management.

Enrollment in College of Business Courses

Enrollment in College of Business courses, with the exception of ACC 2003 and ECO 2003 (which are courses that may not be counted toward a business major), is restricted to students who have successfully completed evaluation under the Texas Success Initiative (TSI) and qualify for enrollment in MAT 1033 Algebra with Calculus for Business (or a higher level mathematics course) and WRC 1013 Freshman Composition I (Q) (or higher). Additionally ACC 2033 will be open to prebusiness and declared business majors and restricted to undeclared (UND) majors.

A specific B.B.A. major cannot be guaranteed and will depend on departmental resources.

College of Business courses at the 3000- and 4000-level are restricted to College of Business majors or to students who require the courses for their particular degree, with the exception of BLW 3013, FIN 3003, MGT 3013, and MKT 3013, which are open to all students who meet course prerequisites.

Enrollment in all other 3000- and 4000-level College of Business courses may be open to nonbusiness majors provided that (a) the course applies to their degree plan, (b) the student has a UTSA GPA of 2.75, and (c) the student meets all prerequisites. If all of these conditions are met, the student may submit their petition to take their course through their advisor. Approval of the Department Chair and College Dean is required. Enrollment in MGT 3003 is restricted to prebusiness and declared business majors only. Students majoring in fields outside the College of Business may not take more than 27 semester credit hours in the College without approval of the Dean of the College of Business.

All degrees in the College of Business require 120 hours. If a student elects to take a course that satisfies both a University Core Curriculum and COB requirement, students may need to take an additional course to meet the 120 hours.

College of Business Academic Credit Internship Policy

The policy for undergraduate students to enroll in internships for academic credit includes the following provisions:

1. The student must be a declared major in the College of Business and in good academic standing at UTSA and in the College of Business.
2. The student must:
 - Have completed a minimum of 75 semester credit hours, of which a minimum of 15 credit hours have been completed at UTSA.
 - Meet all internship course prerequisites, including the minimum grade point average required for enrolling in the internship.
3. The internship must be in (or related to) the student's declared major. The student should consult his/her major degree requirements for specific details.
4. Internships at all for-profit companies must be paid at an hourly rated equivalent to the minimum wage to be in compliance with the Department of Labor guidelines.
5. Each student must meet the requirements of his/her catalog of graduation regarding the total number of semester credit hours that may be earned through internships for academic credit, and meet the following provisions:
 - Each 3-credit-hour academic internship must be completed with a different company/organization.
 - An academic credit internship with a firm at which a student is currently employed may be considered, but only if clear evidence shows that the internship is substantially and programmatically different from such employment.

Independent Study

In order to qualify for an independent study, students must have a COB GPA of 3.0, permission in writing from the instructor, Department Chair, and the Dean of the College in addition to any departmental prerequisites.

The Texas Higher Education Coordinating Board Field of Study Curriculum for Business

The Texas Higher Education Coordinating Board has mandated a field of study curriculum for Business which consists of seven (7) courses with the following Texas Common Course Numbers (TCCN). UTSA courses satisfying this requirement are listed in parentheses (see Appendix B in this catalog for a list of TCCN courses).

2 courses in Accounting:

TCCN: ACCT 2301 (ACC 2013 Principles of Accounting I)

TCCN: ACCT 2302 (ACC 2033 Principles of Accounting II)

1 course in Computer Literacy:

TCCN: BCIS 1305 (IS 1403 Business Information Systems Fluency)

2 courses in Economics:

TCCN: ECON 2301 (ECO 2013 Introductory Macroeconomics)

TCCN: ECON 2302 (ECO 2023 Introductory Microeconomics)

1 course in Mathematics:

TCCN: MATH 1325 (MAT 1033 Algebra with Calculus for Business)

1 course in Speech:

TCCN: SPCH 1321 (COM 1053 Business and Professional Speech)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3

MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
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MS 3053	Management Science and Operations Technology	3
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Students completing degree course requirements with fewer than 120 semester credit hours will augment their program with electives.

- Bachelor of Business Administration degree in General Business (p. 29)
- Bachelor of Business Administration degree in Entrepreneurship (p. 31)

Bachelor of Business Administration Degree in General Business

The Bachelor of Business Administration degree in General Business is an interdisciplinary program within the College of Business. The minimum number of semester credit hours for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in General Business must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3

MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements of the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in General Business must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this courses within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033 Algebra with Calculus for Business

Degree Requirements

A. Required courses in the major:

BLW 3023	Business Organizations and Commercial Law	3
ECO 3033	Economics of Managerial Decisions	3
FIN 3033	Principles of Investment	3
or FIN 3313	Money and Banking	
Any upper-division management (MGT) elective	¹	3
Any upper-division management (MKT) elective	¹	3
3000 or 4000 level Business elective	²	3
3000 or 4000 level Business elective	²	3
4000 level Business elective	²	3
B. Technical Writing		
ENG 2413	Technical Writing	3
C. Lower-division or upper-division business or non-business electives		
Total Credit Hours		29

¹ Excludes Common Body of Knowledge (CBK) courses and FIN 3003.

² No more than 6 semester credit hours may be chosen from the same discipline for the above electives.

Course Sequence Guide for B.B.A. Degree in General Business

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Creative Arts (core)		3
Spring		
COM 1053	Business and Professional Speech (CBK)	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
American History (core)		3

Second Year

Fall		
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2023	Introductory Microeconomics ¹	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Government-Political Science (core)		3
Life & Physical Sciences (core)		3
Evaluated for Admission to the College of Business		
Spring		
ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Language, Philosophy & Culture (core)		3
Life & Physical Sciences (core)		3

Third Year

Fall		
GBA 2013	Social and Ethical Issues in Business (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3

MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Spring		
BLW 3013	Business Law (CBK)	3
FIN 3014	Principles of Business Finance (CBK)	4
MKT 3013	Principles of Marketing (CBK)	3
Component Area Option (core)		3
Any upper-division MGT course (3XXX or 4XXX) (major)		3
Fourth Year		
Fall		
BLW 3023	Business Organizations and Commercial Law (major)	3
ECO 3033	Economics of Managerial Decisions (major)	3
ENG 2413	Technical Writing (major)	3
FIN 3313 or 3033	Money and Banking or Principles of Investment (major)	3
Upper division Business elective (4xxx-level)		3
Spring		
MGT 4893	Management Strategy (CBK)	3
Upper-division MKT elective (3xxx or 4xxx level) (major)		3
Upper-division Business elective (3xxx or 4xxx level) (major)		3
Upper-division Business elective (3xxx or 4xxx level) (major)		3
Business or non-business elective		2
Total Credit Hours:		120.0

- 1 ECO 2013 and ECO 2023 may be taken in either sequence.
- 2 College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Bachelor of Business Administration Degree in Entrepreneurship

The Bachelor of Business Administration degree in Entrepreneurship is a college-wide program. Faculty are drawn from across the College of Business. See the Management section of this catalog for the Entrepreneurship degree plan (p. 49) and the Entrepreneurship website for more information.

Minor in Business Administration

The Minor in Business Administration is open to all University majors (including B.A. in Economics and B.S. in Statistics), except business students seeking a B.B.A. degree. The following 24 semester credit hours are required in the College of Business:

ACC 2003	Foundations of Accounting	3
or ACC 2013	Principles of Accounting I	

BLW 3013	Business Law	3
ECO 2023	Introductory Microeconomics	3
FIN 3003	Survey of Finance	3
GBA 2013	Social and Ethical Issues in Business (prerequisite for BLW 3013)	3
IS 1403	Business Information Systems Fluency	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MKT 3013	Principles of Marketing	3
Total Credit Hours		24

To declare a Minor in Business Administration, obtain advice and seek approval of substitutions for course requirements with your academic advisor.

Department of Accounting

Mission Statement

The mission of the Department of Accounting is to advance accounting knowledge and practice through excellence in accounting education, high-impact research, and professional outreach activities that serve the constituents of the Department in the state, the nation, and the global community.

Department Honors

The Department of Accounting offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during the final two semesters. The completed thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the UPC through the Department of Accounting office for additional information. Department honors can be attained independent of, or in addition to, University Honors. In order to have departmental honors noted on the transcript, students must submit a letter of request for departmental honors to the Department Chair by Census Date of their last semester.

Three-Attempt Limit for the Department of Accounting

A student unable to achieve the minimum required grade in an upper-division accounting course within three enrollments (attempts) shall be required to change his or her major to a field outside of the Department of Accounting. Enrollment in a course for a period of time sufficient for assignment of a grade, including a grade of "W," is considered an attempt.

- Bachelor of Business Administration Degree in Accounting (p. 32)
- Five-Year (150-Hour) Professional Accounting Program (p. 33)

Bachelor of Business Administration Degree in Accounting

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Accounting is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below. Accounting Majors must have an overall grade point average of 2.0 or better in the major courses listed under section A of the Degree Requirements for the B.B.A. in Accounting.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Accounting must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3

MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Courses

Students pursuing the B.B.A. degree in Accounting must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ACC 3023	Intermediate Accounting I
MAT 1033	Algebra with Calculus for Business

Degree Requirements

A. Accounting courses in the major

ACC 3023	Intermediate Accounting I	3
ACC 3033	Intermediate Accounting II	3
ACC 3043	Federal Income Taxation	3
ACC 3113	Accounting Information Systems	3
ACC 3123	Cost Analysis	3
ACC 4013	Principles of Auditing	3
ACC 4163	Contemporary Issues in Accounting Practice	3

B. Electives

Lower-division or upper-division non-accounting business or non-business electives	8
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Total Credit Hours **29**

Notes for students who intend to take the Certified Public Accountant (CPA) examination:

1. Because of the topical coverage of the CPA examination, BLW 3023 Business Organizations and Commercial Law is recommended as a non-accounting elective for students who anticipate taking the CPA examination.
2. The educational requirements for candidates applying for the CPA examination in Texas are regulated by the Texas State Board of Public Accountancy. Students with questions about requirements or eligibility should contact the Texas State Board of Public Accountancy, 333 Guadalupe, Tower III, Suite 900, Austin, TX 78701 or 512-305-7851 or visit their website at www.tsbpa.state.tx.us (<http://www.tsbpa.state.tx.us>).

3. The 21 semester credit hours of upper-division accounting hours required to earn a B.B.A. in Accounting is less than the 30 hours of upper-division accounting coursework required to sit for the CPA examination under current Texas state law. Students interested in preparing for the CPA examination should refer to the Five-Year Professional Accounting Program information following the course sequence guide for the B.B.A. in Accounting.
4. Rule 511.28c of the Texas State Board of Public Accountancy states, "...the board requires that 3 passing semester hours be earned as a result of taking a course in ethics. The course must be taken at a recognized educational institution and should include ethical reasoning, integrity, objectivity, independence and other core values." Students planning to sit for the CPA examination should enroll in the sections of GBA 2013 notated "Recommended for Accounting and Finance majors."

Course Sequence Guide for B.B.A. Degree in Accounting

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
MAT 1033 Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013 Freshman Composition I (Q) (core)	3
American History (core)	3
Creative Arts (core)	3
Spring	
COM 1053 Business and Professional Speech (CBK)	3
ECO 2013 Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403 Business Information Systems Fluency (CBK)	3
WRC 1023 Freshman Composition II (Q) (core)	3
American History (core)	3

Second Year

Fall	Credit Hours
ACC 2013 Principles of Accounting I (CBK)	3
MS 1023 Business Statistics with Computer Applications I (CBK) ¹	3
ECO 2023 Introductory Microeconomics	3
Government-Political Science (core)	3
Life & Physical Sciences (core)	3

Evaluated for Admission to the College of Business.

Spring

ACC 2033 Principles of Accounting II (CBK)	3
IS 3003 Principles of Information Systems for Management	3
MS 3043 Business Statistics with Computer Applications II (CBK)	3
Government-Political Science (core)	3
Language, Philosophy & Culture (core)	3

Third Year

Fall

ACC 3023 Intermediate Accounting I (major)	3
ACC 3113 Accounting Information Systems (major)	3
MGT 3003 Business Communication and Professional Development (CBK)	3
MS 3053 Management Science and Operations Technology	3
Life & Physical Sciences (core)	3

Spring

ACC 3033 Intermediate Accounting II (major)	3
ACC 3123 Cost Analysis (major)	3
FIN 3014 Principles of Business Finance (CBK)	4
GBA 2013 Social and Ethical Issues in Business (CBK)	3
MGT 3013 Introduction to Organization Theory, Behavior, and Management (CBK)	3

Fourth Year

Fall

ACC 3043 Federal Income Taxation (major)	3
ACC 4013 Principles of Auditing (major)	3
BLW 3013 Business Law (CBK)	3
MKT 3013 Principles of Marketing (CBK)	3
Non-accounting or non-business elective (support work)	3

Spring

ACC 4163 Contemporary Issues in Accounting Practice (major)	3
MGT 4893 Management Strategy (CBK)	3
Non-accounting or non-business elective (support work)	3
Non-accounting or non-business elective (support work)	2
Component Area Option (core)	3

Total Credit Hours: 120.0

¹ ECO 2013 and ECO 2023 may be taken in either sequence.

² College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements

Five-Year (150-Hour) Professional Accounting Program

The Five-Year Professional Accounting Program is a 3/2 degree program. Undergraduate accounting majors should apply for admission to the program during the second semester of their junior year (the semester in which they are taking Intermediate Accounting II). Once admitted, these students are allowed to take graduate courses while, technically,

undergraduate students. Students admitted to the 150-hour program will be reclassified from undergraduate to graduate student status when they have completed 120 semester credit hours of coursework toward their degree. In this program the degree plan for the Bachelor of Business Administration (B.B.A.) in Accounting is combined with that of the Master of Accountancy (MACY). The advantage of the program is that it allows accounting majors to spread the graduate courses required for the MACY degree over the fourth and fifth years of the 150-hour program. Upon successful completion of the 150-hour program, students will be simultaneously awarded the B.B.A. in Accounting and the Master of Accountancy (MACY) degrees.

Admission Criteria: To be admitted to the Five-Year (150-Hour) Professional Accounting Program, students must meet the following criteria:

1. Be a declared major in accounting
2. Have an overall grade point average of 3.0, a grade point average of 3.0 in accounting courses taken, and an acceptable score on the Graduate Management Admission Test (GMAT), and
3. Have completed a minimum of 6 hours of upper-level undergraduate accounting courses including ACC 3023 Intermediate Accounting I.

In addition, the student must have completed at least 12 hours of upper-level undergraduate accounting courses by the end of the first semester following admission into the program.

Department of Economics

Mission Statement

The mission of the Department of Economics at The University of Texas at San Antonio is to offer courses and degree programs at both the undergraduate and graduate levels that provide students with the opportunity to gain the necessary theoretical and quantitative tools in economics such that they can understand and apply economics in their daily lives, seek advanced degrees in economics, pursue careers in the global marketplace, and engage in public policy-making. It is also the mission of the department to provide an environment for its faculty and students to engage in research that will further the understanding of economics and enhance the reputation of the Department, the College of Business, and the University.

The Department of Economics offers both a Bachelor of Arts degree and a Bachelor of Business Administration degree in Economics. Economics is a highly versatile major that assists students in pursuing a variety of careers, including positions in business, the public sector, the legal field, and politics, where knowledge of economics is a fundamental asset. The department also offers a minor in economics that is open to all majors in the University.

Department Honors

The Department of Economics offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have

a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the Department of Economics office for additional information. Department honors can be attained independent of, or in addition to, University Honors. In order to have departmental honors noted on the transcript, students must submit a letter of request for departmental honors to the Department Chair by Census Date of their last semester.

- Bachelor of Business Administration Degree in Economics (p. 34)
- Bachelor of Arts Degree in Economics (p. 36)

Bachelor of Business Administration Degree in Economics

The minimum semester credit hours for the Bachelor of Business Administration degree in Economics is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Economics must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3

FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Economics must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. Upper-division semester credit hours in the major:

ECO 3033	Economics of Managerial Decisions	3
ECO 3053	Intermediate Macroeconomics	3
ECO 3113	Introduction to Mathematical Economics	3
ECO 3123	Introduction to Econometrics and Business Forecasting	3

Upper-division electives (3XXX or 4XXX) in Economics. Students are strongly encouraged to complete the specified required courses before enrolling in upper-division electives. Additional information on degree plans under the Bachelor of Business Administration degree is available from your academic advisor or the Department of Economics.

B. Upper-division, non-economics electives

Select 3 semester credit hours of upper-division, non-economics electives within the College of Business	3
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C. Lower-division or upper-division business or non-business electives

Select 5 semester credit hours of lower-division or upper-division business or non-business electives	5
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Total Credit Hours **29**

Course Sequence Guide for B.B.A. Degree in Economics

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Creative Arts (core)	3

Spring

COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	American History (core)	3

Second Year

Fall

ACC 2013	Principles of Accounting I (CBK)	3
ECO 2023	Introductory Microeconomics (CBK) ¹	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
	Language, Philosophy & Culture (core)	3
	Life & Physical Sciences (core)	3

Evaluated for Admission to the College of Business.

Spring

ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
	Government-Political Science (core)	3
	Life & Physical Sciences (core)	3

Third Year

Fall		
ECO 3033	Economics of Managerial Decisions (major)	3
ECO 3053	Intermediate Macroeconomics (major)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
	Government-Political Science (core)	3
Spring		
ECO 3113	Introduction to Mathematical Economics (major)	3
ECO 3123	Introduction to Econometrics and Business Forecasting (major)	3
FIN 3014	Principles of Business Finance (CBK)	4
GBA 2013	Social and Ethical Issues in Business (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
Fourth Year		
Fall		
BLW 3013	Business Law (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
	Upper-division non-economics business elective (3XXX or 4XXX level) (major)	3
	Upper-division ECO elective (3XXX or 4XXX level) (major)	3
	Business or non-business elective	2
Spring		
MGT 4893	Management Strategy (CBK)	3
	Business or non-business elective	3
	Upper-division ECO elective (3xxx or 4xxx level) (major)	3
	Upper-division ECO elective (3xxx or 4xxx level) (major)	3
	Component Area Option (core)	3
Total Credit Hours:		120.0

¹ ECO 2013 and ECO 2023 may be taken in either sequence

² College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Arts Degree in Economics

The minimum semester credit hours for the Bachelor of Arts degree in Economics is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Economics must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional

courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours. In addition to the Core Curriculum requirements, all candidates for the degree must complete the following degree requirements.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

In addition to the Core Curriculum requirements, all candidates for the degree must complete the following degree requirements.

A. Required courses in the major

COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
STA 1053	Basic Statistics	3
	Upper-division economics courses. Students are strongly encouraged to complete the specified required courses before enrolling in upper-division electives. Additional information on degree plans under the Bachelor of Arts degree in Economics is available from your academic advisor or the Department of Economics.	21
ECO 3013	Intermediate Microeconomics	3
ECO 3053	Intermediate Macroeconomics	3

B. Social science electives

Select from American studies (AMS), anthropology (ANT), bicultural-bilingual studies (BBL), criminal justice (CRJ), geography (GRG), history (HIS), legal studies (LGS), philosophy (PHI), political science (POL), psychology (PSY), or sociology (SOC). 12

C. Lower-division or upper-division business or non-business electives

Select 30 additional semester credit hours of lower-division or upper-division business or non-business electives which ensures that at least 39 semester credit hours of upper-division credit are earned. 30

Total Credit Hours **81**

Course Sequence Guide for B.A. Degree in Economics

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
MAT 1033 Algebra with Calculus for Business (core) ²	3
WRC 1013 Freshman Composition I (Q) (core)	3
American History (core)	3
Creative Arts (core)	3

Spring

COM 1053 Business and Professional Speech (major)	3
STA 1053 Basic Statistics (major)	3
WRC 1023 Freshman Composition II (Q) (core)	3
American History (core)	3
Life & Physical Sciences (core)	3

Second Year

Fall	Credit Hours
ECO 2013 Introductory Macroeconomics (core and major) ^{1,2}	3
Government-Political Science (core)	3
Language, Philosophy & Culture (core)	3
Life & Physical Sciences (core)	3
Support coursework	3
DECLARE MAJOR	3

Spring

ECO 2023 Introductory Microeconomics (major) ¹	3
Business or non-business elective (support work)	3
Support coursework	3
Component Area Option (core)	3
Government-Political Science (core)	3

Third Year

Fall	Credit Hours
ECO 3053 Intermediate Macroeconomics	3
Business or non-business elective (support work)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Support coursework	3

Spring

ECO 3013 Intermediate Microeconomics	3
Business or non-business elective (support work)	3
Upper-division business or non-business elective (3XXX or 4XXX level) (support work)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Support coursework	3

Fourth Year

Fall	Credit Hours
Business or non-business elective (support work)	3
Upper-division business or non-business elective (3XXX or 4XXX level) (support work)	3

Upper-division business or non-business elective (3XXX or 4XXX level) (support work)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Spring	
Business or non-business elective (support work)	3
Business or non-business elective (support work)	3
Upper-division business or non-business elective (3XXX or 4XXX level) (support work)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3

Total Credit Hours: 120.0

¹ ECO 2013 and ECO 2023 may be taken in either sequence.

² College of Business students should take MAT 1033 and ECO 2013 to satisfy Core Curriculum requirements.

Minor in Economics

The Minor in Economics is open to all majors in the University. All students pursuing the Minor in Economics must complete 18 semester credit hours.

A. Required courses

ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics	3

B. Upper-division economics courses

Select 12 additional semester credit hours of upper-division economics courses	12
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Total Credit Hours 18

To declare a Minor in Economics, obtain advice, and seek approval of substitutions for course requirements, students must consult their academic advisor.

Department of Finance

Mission Statement

The Department of Finance is committed to contributing knowledge in the field of finance through research and education. The department strives to provide high-quality undergraduate and graduate programs in finance and supports other programs within the College of Business. Theory and application are melded to provide an environment in which new ideas are developed to meet the challenges and transformations arising in a changing world of financial practices and innovations, thereby preparing students for successful careers and providing employers with a workforce trained to shape the future. The Department supports high-quality academic research in all areas of finance.

The Department of Finance offers a Bachelor of Business Administration degree in Finance and a Bachelor of Business Administration degree in Real Estate Finance and Development. A major in finance gives students the opportunity to learn the basic financial theories and applications needed in managerial financial decision making. Areas in finance include corporate finance, investments, insurance, real estate, and financial institutions and markets. The degree in real estate finance and development is designed for students interested in managing businesses associated with real estate and the planning, financing, development,

and construction of building projects. The department offers a Minor in Finance and a Minor in Real Estate that are available only to students pursuing a Bachelor of Business Administration (B.B.A.) degree. A Minor in Construction Management is only available to students pursuing a Real Estate Finance and Development degree.

Department Honors

The Department of Finance offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the Department of Finance office for additional information. Department honors can be attained independent of, or in addition to, University Honors. In order to have departmental honors noted on the transcript, students must submit a letter of request for departmental honors to the Department Chair by Census Date of their last semester.

- Bachelor of Business Administration Degree in Finance (p. 38)
- Bachelor of Business Administration Degree in Real Estate Finance and Development (p. 40)

Bachelor of Business Administration Degree in Finance

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Finance is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Finance must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Finance must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. Upper-division credit hours in the major and supporting area

ACC 3023	Intermediate Accounting I	3
ACC 3033	Intermediate Accounting II	3
FIN 3023	Intermediate Corporate Finance	3
FIN 3033	Principles of Investment	3
FIN 3313	Money and Banking	3
FIN 4893	Cases and Problems in Finance	3
Finance electives (FIN 3003 Survey of Finance may not be applied to meeting this requirement.)		9
FIN 4873	Computer Modeling of Financial Applications (Recommended as one of these finance electives.)	

Finance majors may take ACC 3053 in lieu of ACC 3023 and ACC 3033. Students choosing to take ACC 3053 must take 3 additional semester credit hours of finance electives for a total of 12 hours of finance electives. FIN 3003 Survey of Finance may not be applied to meeting this requirement.

B. Lower-division or upper-division business or non-business electives

Select 2 semester credit hours of lower-division or upper-division business or non-business electives	2
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Total Credit Hours **29**

Course Sequence Guide for B.B.A. Degree in Finance

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students should make every attempt to take the courses in the indicated sequence. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Creative Arts (core)		3
Spring		
COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History (core)		3

Second Year

Fall

ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2023	Introductory Microeconomics ¹	3
Life & Physical Sciences (core)		3
Government-Political Science (core)		3
Evaluated for Admission to the College of Business.		

Spring

ACC 2033	Principles of Accounting II (CBK)	3
FIN 3014	Principles of Business Finance (CBK)	4
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Language, Philosophy & Culture (core)		3
Government-Political Science (core)		3

Third Year

Fall

ACC 3023 or 3053	Intermediate Accounting I (or Intermediate Accounting for Finance Majors)	3
FIN 3023	Intermediate Corporate Finance (major)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Life & Physical Sciences (core)		3

Spring

ACC 3033	Intermediate Accounting II or Upper-division FIN elective (major)	3
FIN 3033	Principles of Investment (major)	3
FIN 3313	Money and Banking (major)	3
GBA 2013	Social and Ethical Issues in Business (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3

Fourth Year

Fall

BLW 3013	Business Law (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
Upper-division FIN elective (3XXX or 4XXX level) (major)		3
Upper-division FIN elective (3XXX or 4XXX level) (major)		3

Spring

FIN 4893	Cases and Problems in Finance (major)	3
MGT 4893	Management Strategy (CBK)	3
Business or non-business elective (support work)		2
Component Area Option (core)		3

Upper-division FIN elective (3XXX or 4XXX level) (major)	3
Total Credit Hours:	120.0

- ECO 2013 and ECO 2023 may be taken in either sequence.
- College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Real Estate Finance and Development

The Bachelor of Business Administration degree in Real Estate Finance and Development offers students the opportunity to minor in Construction Management, Facility and Property Management, or Finance. The Construction Management minor is offered by the College of Business with support from the Architecture program. Architecture and Construction Science and Management courses are described under the College of Architecture. The minimum number of semester credit hours for the B.B.A. in Real Estate Finance and Development is 120, 39 of which must be at the upper-division level. The minimum number of hours with the minor in Construction Management is 124, the minimum number of hours with the minor in Facility and Property Management is 121, and the minimum number of hours with the minor in Finance is 120.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge requirements, and the degree requirements, which are listed below. All real estate related courses are listed under the Real Estate (RFD) course description heading.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Real Estate Finance and Development must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3

COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Real Estate Finance and Development must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. Required courses

FIN 3433	Principles of Real Estate	3
FIN 4713	Mortgage Banking and Real Estate Finance	3
FIN 4723	Principles of Real Estate Investment	3
RFD 3523	Real Estate Law (Students completing the Construction Management minor may substitute CSM 4633 Construction Law.)	3
RFD 3533	Principles of Construction for Real Estate Professionals (Students completing the Construction Management minor must take ARC 1133 in lieu of RFD 3533.)	3
RFD 4733	Principles of Sustainable Real Estate Development	3

B. Completion of Option 1 or Option 2

Select one of the following:

Option 1: 6 semester credit hours of additional real estate (RFD) or facility and property management (FM) courses, and 5 semester credit hours of lower-division or upper-division business or non-business electives

Options 2: Completion of a Minor in Construction Management, a Minor in Facility and Property Management, or a Minor in Finance.

Total Credit Hours **29-36**

Course Sequence Guide for B.B.A. Degree in Real Estate Finance and Development – Option 1

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students should make every attempt to take the courses in the indicated sequence. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall	Credit Hours	
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Creative Arts (core)	3
Spring		
COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	American History (core)	3

Second Year

Fall		
ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2023	Introductory Microeconomics ¹	3
	Government-Political Science (core)	3
	Life & Physical Sciences (core)	3
Evaluated for Admission to the College of Business.		
Spring		
ACC 2033	Principles of Accounting II (CBK)	3
FIN 3014	Principles of Business Finance (CBK)	4

GBA 2013	Social and Ethical Issues in Business (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
	Language, Philosophy & Culture (core)	3

Third Year

Fall

BLW 3013	Business Law (CBK)	3
FIN 3433	Principles of Real Estate (major)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
	Government-Political Science (core)	3

Spring

FIN 4723	Principles of Real Estate Investment (major)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
RFD 3523	Real Estate Law (major)	3
	Upper-division RFD or FM elective (3XXX or 4XXX level) (support work) Option 1	3

Fourth Year

Fall

FIN 4713	Mortgage Banking and Real Estate Finance (major)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
RFD 3533	Principles of Construction for Real Estate Professionals (major)	3
	Business or non-business elective (support work) Option 1	3
	Life & Physical Sciences (core)	3

Spring

MGT 4893	Management Strategy (CBK)	3
RFD 4733	Principles of Sustainable Real Estate Development (major)	3
	Business or non-business elective (support work)	2
	Upper-division RFD or FM elective (3XXX or 4XXX level) (support work) Option 1	3
	Component Area Option (core)	3

Total Credit Hours: 120.0

1 ECO 2013 and ECO 2023 may be taken in either sequence.

2 College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

- Minor in Construction Management (p. 41)
- Minor in Finance (p. 38)
- Minor in Real Estate (p. 42)

Minor in Construction Management

The minor in Construction Management is available only to students pursuing a B.B.A. in Real Estate Finance and Development degree. All students pursuing the minor in Construction Management must complete

the following 18 semester credit hours as well as the Core, the CBK, and B.B.A. in Real Estate Finance and Development major requirements listed in part A of the degree requirements:

A. Required courses:

BLW 3013	Business Law	3
ARC 1113	Introduction to the Built Environment	3
or CSM 2333	Construction Culture and History	
CSM 2113	Construction Materials and Methods	3
CSM 3123	Technical Communication	3
CSM 4013	Construction Estimating I	3

B. Select one of the following:

CSM 4613	Sustainable Building Practice	
RFD 4903	Internship in Construction Management	
CSM 4513	Project Management ¹	

Total Credit Hours 18

¹ Space may be limited in these classes. Students must obtain permission from the coordinator of the Construction Science and Management program to enroll.

To declare a Minor in Construction Management and to obtain advice, students must consult with their advisor.

Students in the Real Estate Finance and Development Program pursuing a minor in Construction Management must meet the required grade point average (GPA) levels to complete the required internship. Students must have a minimum 2.0 cumulative GPA at the university level, at the College of Business level, and within the Real Estate Finance and Development Program.

Minor in Finance

The Minor in Finance is available only to students pursuing a B.B.A. degree. All students pursuing the Minor in Finance must complete 19 semester credit hours of coursework.

A. Required courses

FIN 3014	Principles of Business Finance	4
FIN 3033	Principles of Investment	3
FIN 3313	Money and Banking	3

B. Upper-division finance electives

Select 9 additional semester credit hours of upper-division finance electives. FIN 3003 Survey of Finance may not be applied to meeting this requirement.

Total Credit Hours 19

To declare a Minor in Finance and obtain advice, students must consult with their academic advisor.

Minor in Real Estate

The Minor in Real Estate is available to students pursuing a B.B.A. degree. All students pursuing the Minor in Real Estate must complete 19 semester credit hours of coursework.

A. Required courses

FIN 3014	Principles of Business Finance	4
FIN 3433	Principles of Real Estate	3

B. Real Estate Electives

Select 12 additional semester credit hours of real estate courses 12

Total Credit Hours 19

To declare a Minor in Real Estate and obtain advice, students must consult with their academic advisor.

Department of Information Systems and Cyber Security

The Department of Information Systems and Cyber Security offers two undergraduate degree programs: one with a major in Information Systems, and one with a major in Cyber Security. The Department offers minors in Cyber Security, Digital Forensics, Information Systems, and Network and Data Center Management which are open to all majors in the University. A Certificate in Pathogenic Outbreak Investigations is offered in collaboration with the Departments of Biology and Computer Science in the College of Sciences.

Department Honors

The Department of Information Systems and Cyber Security offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for Honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major. To enroll in honors thesis courses and to graduate with the Honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during the final two semesters. The completed honors thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the Department Chair for additional information. Major honors can be obtained independent of, or in addition to, University Honors. In order to have departmental honors noted on the transcript, students must submit a letter of request for departmental honors to the Department Chair by Census Date of their last semester.

- Bachelor of Business Administration Degree in Information Systems (p. 42)
- Bachelor of Business Administration Degree in Cyber Security (p. 44)

Bachelor of Business Administration Degree in Information Systems

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Information Systems is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Information Systems must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences. All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Information Systems must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033 Algebra with Calculus for Business

Degree Requirements

A. Information systems courses in the major

IS 3063	Database Management for Information Systems	3
IS 3073	Application Development	3
IS 3413	Introduction to Telecommunications for Business	3
IS 4053	Systems Analysis and Design	3
IS 4063	Advanced Topics in Information Systems	3

Additional upper-division information systems coursework. Students may also select one of the following as 3 hours of the additional 6 hours of information systems electives:

MOT 4023 Essentials of Technology Management
or MOT 4143 Introduction to Project Management

B. Information systems support work

IS 2031	Introduction to Programming Concepts Laboratory	1
IS 2033	Introduction to Programming Concepts	3
IS 2041	Intermediate Object-Oriented Programming Laboratory	1
IS 2043	Intermediate Object-Oriented Programming	3

Total Credit Hours **29**

Course Sequence Guide for B.B.A. Degree in Information Systems

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Creative Arts (core)	3

Spring

COM 1053	Business and Professional Speech (CBK)	3
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ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3	IS 4053	Systems Analysis and Design (major)	3
IS 1403	Business Information Systems Fluency (CBK)	3	MKT 3013	Principles of Marketing (CBK) Component Area Option (core)	3
WRC 1023	Freshman Composition II (Q) (core) American History (core)	3		Upper-division IS elective (3xxx or 4xxx level) (major)	3
	Second Year			Spring	
	Fall		BLW 3013	Business Law (CBK)	3
ACC 2013	Principles of Accounting I (CBK)	3	IS 4063	Advanced Topics in Information Systems (major)	3
IS 2031	Introduction to Programming Concepts Laboratory (support work)	1	MGT 4893	Management Strategy (CBK)	3
IS 2033	Introduction to Programming Concepts (support work)	3		Upper-division IS elective (3xxx or 4xxx level) (major)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3		Total Credit Hours:	120.0
Government-Political Science (core)		3			
Language, Philosophy & Culture (core)		3			
Evaluation for Admission to the College of Business.					
	Spring				
ACC 2033	Principles of Accounting II (CBK)	3			
ECO 2023	Introductory Microeconomics (CBK) ¹	3			
IS 2041	Intermediate Object-Oriented Programming Laboratory (support work)	1			
IS 2043	Intermediate Object-Oriented Programming (support work)	3			
IS 3003	Principles of Information Systems for Management (CBK)	3			
MS 3043	Business Statistics with Computer Applications II (CBK)	3			
	Third Year				
	Fall				
IS 3063	Database Management for Information Systems (major)	3			
IS 3073	Application Development (major)	3			
MS 3053	Management Science and Operations Technology (CBK)	3			
Government-Political Science (core)		3			
Life & Physical Sciences (core)		3			
	Spring				
FIN 3014	Principles of Business Finance (CBK)	4			
IS 3413	Introduction to Telecommunications for Business (major)	3			
MGT 3003	Business Communication and Professional Development (CBK)	3			
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3			
Life & Physical Sciences (core)		3			
	Fourth Year				
	Fall				
GBA 2013	Social and Ethical Issues in Business (CBK)	3			

¹ ECO 2013 and ECO 2023 may be taken in either sequence.

² College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Cyber Security

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Cyber Security is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Cyber Security must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4

GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Cyber Security must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. Information systems courses in the major

IS 3033	Operating Systems	3
IS 3413	Introduction to Telecommunications for Business	3
IS 3423	Network Security	3
IS 3513	Information Assurance and Security	3
Select three from the following:		9
IS 3453	Networking Fundamentals	
IS 3523	Intrusion Detection and Incident Response	
IS 3533	Cyber Law	
IS 4033	Network Operations	
IS 4143	Wide Area Networks	
IS 4223	Emerging Network Technologies	
IS 4463	Web Application Security	
IS 4473	Information Assurance Policy	
IS 4483	Digital Forensic Analysis I	
IS 4513	Cyber and Physical Systems	
IS 4523	Digital Forensic Analysis II	
MOT 4023	Essentials of Technology Management	
or MOT 4143	Introduction to Project Management	

B. Information systems support work

IS 2031	Introduction to Programming Concepts Laboratory	1
IS 2033	Introduction to Programming Concepts	3
IS 2041	Intermediate Object-Oriented Programming Laboratory	1
IS 2043	Intermediate Object-Oriented Programming	3

Total Credit Hours **29**

Course Sequence Guide for B.B.A. Degree in Cyber Security

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Creative Arts (core)		3

Spring

COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History (core)		3

Second Year

Fall

ACC 2013	Principles of Accounting I (CBK)	3
IS 2031	Introduction to Programming Concepts Laboratory (support work)	1
IS 2033	Introduction to Programming Concepts (support work)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2023	Introductory Microeconomics ¹	3
Government-Political Science (core)		3

Evaluation for Admission to the College of Business.

Spring

ACC 2033	Principles of Accounting II (CBK)	3
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IS 2041	Intermediate Object-Oriented Programming Laboratory (support work)	1
IS 2043	Intermediate Object-Oriented Programming (support work)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Life & Physical Sciences (core)		3
Third Year		
Fall		
IS 3033	Operating Systems (major)	3
IS 3413	Introduction to Telecommunications for Business (major)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Language, Philosophy & Culture (core)		3
Spring		
IS 3423	Network Security (major)	3
IS 3513	Information Assurance and Security (major)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
Life & Physical Sciences (core)		3
Fourth Year		
Fall		
FIN 3014	Principles of Business Finance (CBK)	4
GBA 2013	Social and Ethical Issues in Business (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
Upper-division IS elective (major)		3
Component Area Option (core)		3
Spring		
BLW 3013	Business Law (CBK)	3
MGT 4893	Management Strategy (CBK)	3
Upper-division IS elective (major)		3
Upper-division IS elective (major)		3
Total Credit Hours:		120.0

- ECO 2013 and ECO 2023 may be taken in either sequence.
- College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

- Minor in Cyber Security (p. 46)
- Minor in Digital Forensics (p. 46)
- Minor in Information Systems (p. 46)
- Minor in Network and Data Center Management (p. 47)
- Minor in Technology Management for Business Majors (p. 47)
- Minor in Technology Management for Nonbusiness Majors (p. 47)

Minor in Cyber Security

The Minor in Cyber Security is open to all majors in the University. A student majoring in Information Systems will be required to take 18 semester credit hours of coursework. Other majors may be required to take additional hours depending on their academic background.

A. Required courses

IS 3413	Introduction to Telecommunications for Business	3
IS 3423	Network Security	3
IS 3513	Information Assurance and Security	3
IS 3523	Intrusion Detection and Incident Response	3

B. Elective courses

Select two of the following:		6
IS 3033	Operating Systems	
IS 3453	Networking Fundamentals	
IS 3533	Cyber Law	
IS 4033	Network Operations	
IS 4143	Wide Area Networks	
IS 4223	Emerging Network Technologies	
IS 4463	Web Application Security	
IS 4473	Information Assurance Policy	
IS 4483	Digital Forensic Analysis I	
IS 4513	Cyber and Physical Systems	
IS 4523	Digital Forensic Analysis II	
Total Credit Hours		18

To declare a Minor in Cyber Security, obtain advice, or seek approval of course substitutions for course requirements, students must consult their academic advisor.

Minor in Digital Forensics

The Minor in Digital Forensics is open to all majors in the University. A student majoring in Information Systems will be required to take 18 semester credit hours of coursework. Other majors may be required to take additional hours depending on their academic background.

IS 3433	Introduction to Digital Forensics	3
IS 3513	Information Assurance and Security	3
IS 3523	Intrusion Detection and Incident Response	3
IS 3533	Cyber Law	3
IS 4483	Digital Forensic Analysis I	3
IS 4523	Digital Forensic Analysis II	3
Total Credit Hours		18

To declare a Minor in Digital Forensics, obtain advice, or seek approval of course substitutions for course requirements, students must consult their academic advisor.

Minor in Information Systems

The Minor in Information Systems is open to all majors in the University. The number of semester credit hours required for a student in the College of Business is 19. Other students may be required to take additional hours depending on their academic background.

A. Required courses

IS 2041	Intermediate Object-Oriented Programming Laboratory	1
IS 2043	Intermediate Object-Oriented Programming	3
IS 3003	Principles of Information Systems for Management	3
IS 3063	Database Management for Information Systems	3
IS 3413	Introduction to Telecommunications for Business	3
IS 4053	Systems Analysis and Design	3

B. Elective course

Select one of the following:		3
MOT 4023	Essentials of Technology Management	
MOT 4143	Introduction to Project Management	
Any IS junior- or senior-level course that counts for the IS major		

Total Credit Hours **19**

To declare a Minor in Information Systems, obtain advice, or seek approval of course substitutions for course requirements, students must consult their academic advisor.

Minor in Network and Data Center Management

The Minor in Network and Data Center Management is open to all majors in the University. A student majoring in Information Systems or Cyber Security will be required to take 21 semester credit hours of coursework. Other majors may be required to take additional hours depending on their academic background.

IS 3453	Networking Fundamentals	3
IS 3513	Information Assurance and Security	3
IS 3523	Intrusion Detection and Incident Response	3
IS 4033	Network Operations	3
IS 4213	Data Center Infrastructure Planning	3
IS 4223	Emerging Network Technologies	3
MOT 4143	Introduction to Project Management	3

Total Credit Hours **21**

To declare a Minor in Network and Data Center Management, obtain advice, or seek approval of course substitutions for course requirements, students must consult with their academic advisor.

Minor in Technology Management for Business Majors

The Minor in Technology Management for Business Majors is only open to business majors in the University. The number of required semester credit hours for this minor is 18.

A. Required Courses

MOT 4023	Essentials of Technology Management	3
MOT 4143	Introduction to Project Management	3
MOT 4203	Strategic Management of Technology and Innovation	3
MOT 4313	Disruptive Innovations	3

B. Electives

Select two of the following:		6
ENT 4123	Commercialization and Enterprise Planning	

ENT 4223	Managing the Entrepreneurial Team	
ENT 4873	Entrepreneurship	
MS 3403	Logistics Management	
MS 4313	Six Sigma and Lean Operations	
MS 4343	Production/Operations Management	

Total Credit Hours **18**

Minor in Technology Management for Nonbusiness Majors

The Minor in Technology Management for Nonbusiness Majors is only open to nonbusiness majors in the University. The number of required semester credit hours for this minor is 18.

A. Required Courses

ACC 2003	Foundations of Accounting	3
FIN 3003	Survey of Finance	3
MKT 3013	Principles of Marketing	3
MOT 4023	Essentials of Technology Management	3
MOT 4143	Introduction to Project Management	3

B. Elective

Select one of the following:		3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	
MOT 4203	Strategic Management of Technology and Innovation	
MOT 4313	Disruptive Innovations	
MS 3403	Logistics Management	

Total Credit Hours **18**

To declare a Minor in Technology Management for either nonbusiness or business majors, obtain advice, and seek approval of course substitutions for course requirements, students must consult with their academic advisor.

Certificate in Pathogenic Outbreak Investigations

This interdisciplinary certificate program is designed for students in biology, information systems and cyber security, computer science and computer engineering disciplines to investigate biological and digital pathogen identification, propagation prediction, and mitigation. The required capstone project reinforces the cross-disciplinary learning fostered by the program and provides real-world practice.

Students pursuing the Certificate in Pathogenic Outbreak Investigations must complete a minimum of 15 semester credit hours:

A. Courses required by all majors:

Topic: Introduction to Pathogenic Outbreak Investigations:		3
BIO 4953	Special Studies in Biology	
or CS 4953	Special Studies in Computer Science	
or IS 4953	Special Studies in Information Systems	
Topic: Advanced Research in Pathogenic Outbreak Investigations:		3
BIO 4953	Special Studies in Biology	
or CS 4953	Special Studies in Computer Science	
or IS 4953	Special Studies in Information Systems	

B. Required course according to major:		3
BIO 3713	Microbiology	
CS 4953	Special Studies in Computer Science (Topic: Cloud-oriented Big Data and Software Engineering)	
IS 4953	Special Studies in Information Systems (Topic: Malware Agent Analysis)	
C. Elective courses for each major. Select 6 hours from one of the following groups depending on major:		6
Biology elective options ¹		
BIO 3513	Biochemistry	
BIO 3743	Bacteriology	
BIO 4743	Immunology	
BIO 5762	Fundamentals of Immunology for Biotechnology	
BIO 6973	Special Problems (Comparative Genomics)	
BIO 6973	Special Problems (Microbial Genomics)	
Information Systems/Cyber Security elective options		
IS 3523	Intrusion Detection and Incident Response	
IS 4463	Web Application Security	
IS 4483	Digital Forensic Analysis I	
IS 4523	Digital Forensic Analysis II	
IS 4513	Cyber and Physical Systems	
Computer Science elective options		
CS 3753	Introduction to Data Science (see description below)	
CS 4223	Bioinformatics and Big Data (see description below)	
CS 4353	Unix and Network Security	
CS 4373	Introduction to Data Mining (see description below)	
CS 4593	Topics in Computer Science	
CS 4843	Introduction to Cloud Computing (see description below)	
CS 4963	Advanced Topics in Systems and Cloud (see description below)	
CS 4973	Advanced Topics in Data Science (see description below)	
Total Credit Hours		15

¹ Undergraduate biology students are permitted to take graduate courses based on need, student background/capability, and instructor consent.

This certificate is open only to biology, information systems and cyber security, computer science and computer engineering students. To apply for the Pathogenic Outbreak Investigations certificate, students should consult with the Director of the Office of Undergraduate Research for specific information about certificate requirements and consult with their academic advisors to verify that they have met all University requirements. All courses used to satisfy the requirements of this undergraduate certificate program must be college-level courses taken at UTSA.

New Course Descriptions for certificate (in Department of Computer Science):

CS 3753. Introduction to Data Science. (3-0) 3 Credit Hours.

Prerequisites: CS 2123, CS 2233, and CS 3333. Study of fundamental methods and models of data science. Topics include data management,

Extract-Transform-Loading methods, machine learning models, and data visualization. Use of a specialized programming language is emphasized.

CS 4223. Bioinformatics and Big Data. (3-0) 3 Credit Hours.

Prerequisite: CS 3343 or consent of instructor. Hands-on introduction to large-scale analysis of heterogeneous data with emphasis on integrating information and tools from publicly available biological databases to address complex problems.

CS 4373. Introduction to Data Mining. (3-0) 3 Credit Hours.

Prerequisite: CS 3343 or consent of instructor. Principles, techniques, systems and evaluation of data mining. Topics may include data preprocessing, frequent pattern mining, association mining, classification and prediction, cluster analysis, and advanced topics such as mining streams, time-Series, texts, and graphs.

CS 4843. Introduction to Cloud Computing. (3-0) 3 Credit Hours.

Prerequisites: CS 3421 and CS 3423. The general trend of modern computing in cloud. Cloud computing paradigm and associate key technologies. Programming in cloud environment (e.g., Hadoop, MapReduce, and OpenStack APIs). Privacy and security in Cloud.

CS 4963. Advanced Topics in Systems and Cloud. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Advanced topics in an area of systems and cloud. May be repeated for credit when topics vary.

CS 4973. Advanced Topics in Data Science. (3-0) 3 Credit Hours.

Prerequisite: CS 4843 or consent of instructor. Advanced topics in cloud computing (such as virtualization technologies for hardware resources, including virtual machines and container-based virtualizations; datacenter operations, energy-efficient and green computing; scalable storage systems and architectures for cloud environments). May be repeated for credit when topics vary.

Department of Management

The Department of Management offers an undergraduate degree program with a major in management. A concentration within management in international business may also be pursued. The Department also offers an undergraduate degree program with a major in human resource management. The Department offers minors in international management and management available only to students pursuing a Bachelor of Business Administration (B.B.A.) degree. The management major and the management major with a concentration in international business cannot be combined into a double major.

Department Honors

The Department of Management offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

The Department Undergraduate Programs Committee (UPC) bases selection for honors designation on the student's academic performance and recommendation. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors

thesis course during their final two semesters. The supervising faculty sponsor from the student's discipline and the UPC must approve the completed thesis. Students interested in this program should contact the Department Chair for additional information. Department honors can be attained independent of, or in addition to, University Honors. In order to have departmental honors noted on the transcript, students must submit a letter of request for departmental honors to the Department Chair by Census Date of their last semester.

- Bachelor of Business Administration Degree in Management (p. 49)
- Bachelor of Business Administration Degree in Management with an International Business Concentration (p. 51)
- Bachelor of Business Administration Degree in Human Resource Management (p. 53)
- Bachelor of Business Administration Degree in Entrepreneurship (p. 54)

Bachelor of Business Administration Degree in Management

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Management must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3

FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Management must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033 Algebra with Calculus for Business

Degree Requirements

A. Upper-division semester credit hours in the major

MGT 3023	Understanding People and Organizations	3
MGT 3613	Managing Human Resources	3
MGT 4213	Designing Organizations	3
MGT 4923	Leading Organizations and Making Decisions	3
MGT 4943	Managing Effective Teams and Resolving Conflict	3

B. Support work in upper-division Management electives

Select 3 semester credit hours of support work in upper-division Management electives	3
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C. Support work selected from College of Business upper-division electives, in addition to the Core Curriculum and CBK requirements

Select 6 semester credit hours. FIN 3003 may not be used as an upper-division elective.	6
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D. Upper-division electives from outside the College of Business, which must have international content

Select 3 semester credit hours, which could include, but are not limited to, the following examples. Many different types of courses can satisfy the requirement.

GRG 3123	Geography of Latin America	3
GRG 3133	Geography of Europe	
HIS 3303	History of Mexico	
HIS 3353	Latin America since Independence	
HIS 3523	European Cultural History	
POL 3393	Latin American Politics	
POL 3403	European Governments	
POL 3453	The Politics of Mexico	

E. Lower-division or upper-division business or non-business electives

Select 2 semester credit hours 2

Total Credit Hours **29**

Course Sequence Guide for B.B.A. Degree in Management

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Creative Arts (core)	3
Spring		
COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	American History (core)	3

Second Year

Fall		
ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2023	Introductory Microeconomics ¹	3
	Language, Philosophy & Culture (core)	3

Life & Physical Sciences (core) 3
 Evaluated for Admission to the College of Business.

Spring

ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
	Life & Physical Sciences (core)	3
	Government-Political Science (core)	3

Third Year

Fall

GBA 2013	Social and Ethical Issues in Business (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
	Government-Political Science (core)	3

Spring

BLW 3013	Business Law (CBK)	3
FIN 3014	Principles of Business Finance (CBK)	4
IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3023	Understanding People and Organizations (major)	3
MGT 3613	Managing Human Resources (major)	3

Fourth Year

Fall

MGT 4213	Designing Organizations (major)	3
MGT 4923	Leading Organizations and Making Decisions (major)	3
	Component Area Option (core)	3
	Upper-division Business elective (3xxx or 4xxx level) (support work)	3
	Upper-division non-business elective (support work)	3

Spring

MGT 4893	Management Strategy (CBK)	3
MGT 4943	Managing Effective Teams and Resolving Conflict (major)	3
	Business or non-business elective (support work)	2
	Upper-division Business elective (3xxx or 4xxx level) (support work))	3
	Upper-division MGT elective (3xxx or 4xxx level) (support work))	3

Total Credit Hours: 120.0

¹ ECO 2013 and ECO 2023 may be taken in either sequence.

² College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Management with an International Business Concentration

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Management with an International Business Concentration must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3

MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Management with an International Business concentration must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. International courses in the major 9

MGT 4073	International Management	
MGT 4083	Comparative International Management Practices	
MKT 4073	International Marketing	

B. Additional courses in the major

1. Select one of the following:		3
ECO 3193	International Economics	
ECO 4303	Economics of Developing Countries	
FIN 4613	Introduction to International Finance	
2. Select two of the following (Special Studies courses and Internship must be International Topics only):		6
GBA 4953	Special Studies in General Business Administration	
MGT 3023	Understanding People and Organizations	
MGT 4933	Internship in Management	
MGT 4953	Special Studies in Management	
MKT 4953	Special Studies in Marketing	
Other international business electives as approved by Department of Management faculty through your academic advisor.		

C. Directed elective support work outside the College of Business

1. Select one of the following:		3
GRG 3123	Geography of Latin America	
GRG 3133	Geography of Europe	
GRG 3143	Geography of Mexico	
GRG 3213	Cultural Geography	
GRG 3423	Geopolitics of Russia and Eurasia	
GRG 3433	The Geography and Politics of the Asian Rim	
GRG 3613	Conservation of Resources	
GRG 3633	Geography of Development	

GRG 3643	Political Geography	
2. Select one of the following:		3
HIS 3283	Twentieth-Century Europe	
HIS 3303	History of Mexico	
HIS 3313	History of U.S. Relations with Latin America	
HIS 3353	Latin America since Independence	
HIS 3523	European Cultural History	
HIS 3603	Occupation, Revolution and Nation in Africa	
HIS 3753	The Soviet Union and After	
HIS 3823	History of American Foreign Relations	
HIS 3923	China in Revolution	
HIS 3943	History of India	
HIS 3963	Women and Gender in India	
3. Select one of the following:		3
POL 3033	International Governance	
POL 3043	International Human Rights	
POL 3393	Latin American Politics	
POL 3403	European Governments	
POL 3433	Governments and Politics of Southeast Asia	
POL 3443	Governments and Politics of East Asia	
POL 3453	The Politics of Mexico	
POL 3493	Politics of the Middle East	
POL 3513	International Organizations in World Politics	
POL 3523	Force in International Politics	
POL 3563	Current Issues in World Politics	
POL 3763	Globalization	
D. Lower-division or upper-division business or non-business electives		
Select 2 semester credit hours of lower-division or upper-division business or non-business electives		2
Total Credit Hours		29

Course Sequence Guide for B.B.A. Degree in Management with an International Business Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and major) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3

Creative Arts (core)		3
Spring		
COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History (core)		3
Second Year		
Fall		
ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2023	Introductory Microeconomics ¹	3
Language, Philosophy & Culture (core)		3
Life & Physical Sciences (core)		3
Evaluated for Admission to the College of Business.		
Spring		
ACC 2033	Principles of Accounting II (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
Life & Physical Sciences (core)		3
Government-Political Science (core)		3
Third Year		
Fall		
GBA 2013	Social and Ethical Issues in Business (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Spring		
BLW 3013	Business Law (CBK)	3
FIN 3014	Principles of Business Finance (CBK)	4
IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 4073	International Management (major)	3
MKT 4073	International Marketing (major)	3
Fourth Year		
Fall		
MGT 4083	Comparative International Management Practices (major)	3
Component Area Option (core)		3
Directed elective - GRG (support work)		3
Additional course in major - Section B (1) of degree requirements		3

Additional course in major - Section B (2) of degree requirements	3
Spring	
MGT 4893 Management Strategy (CBK)	3
Business or non-business elective (support work)	2
Directed elective - HIS (support work)	3
Directed elective - POL (support work)	3
Additional course in major, Section B (2) of degree requirements	3
Total Credit Hours:	120.0

- 1 ECO 2013 Introductory Macroeconomics and ECO 2023 Introductory Microeconomics may be taken in either sequence.
- 2 College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Human Resource Management

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Human Resource Management must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013 Principles of Accounting I	3
ACC 2033 Principles of Accounting II	3
BLW 3013 Business Law	3
COM 1053 Business and Professional Speech	3
ECO 2013 Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3

ECO 2023 Introductory Microeconomics	3
FIN 3014 Principles of Business Finance	4
GBA 2013 Social and Ethical Issues in Business	3
IS 1403 Business Information Systems Fluency	3
IS 3003 Principles of Information Systems for Management	3
MAT 1033 Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003 Business Communication and Professional Development	3
MGT 3013 Introduction to Organization Theory, Behavior, and Management	3
MGT 4893 Management Strategy (taken in semester of graduation)	3
MKT 3013 Principles of Marketing	3
MS 1023 Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043 Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053 Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Human Resource Management must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. Upper-division courses in the major

MGT 3613 Managing Human Resources	3
MGT 4613 Compensating Employees	3
MGT 4623 Staffing Organizations	3
MGT 4663 Training and Developing Employees	3
MGT 4803 Managing Human Resources for Competitive Advantage	3

B. Human resource electives

Select three of the following:	9
MGT 3023 Understanding People and Organizations	
MGT 3123 Organizational Communication	
MGT 3253 Interpersonal Communication	
MGT 4213 Designing Organizations	
MGT 4643 Human Resources Law	
MGT 4923 Leading Organizations and Making Decisions	
MGT 4933 Internship in Management (HR internship)	

To substitute another course for one of these human resource electives, a student must submit a petition to their academic advisor and receive approval from a Human Resource Management full-time faculty member before registering for the course.

C. Support work

COM 2113	Public Speaking	3
or ENG 2413	Technical Writing	

D. Lower-division or upper-division business or non-business electives

Select 2 semester credit hours of lower-division or upper-division business or non-business electives	2
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Total Credit Hours **29**

Course Sequence Guide for B.B.A. Degree in Human Resource Management

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Creative Arts (core)	3
Spring		
COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	American History (core)	3

Second Year

Fall		
ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2023	Introductory Microeconomics ¹	3
	Language, Philosophy & Culture (core)	3
	Life & Physical Sciences (core)	3

Evaluated for Admission to the College of Business.

Spring

ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3

	Government-Political Science (core)	3
	Life & Physical Sciences (core)	3

Third Year**Fall**

GBA 2013	Social and Ethical Issues in Business (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
	Government-Political Science (core)	3

Spring

BLW 3013	Business Law (CBK)	3
FIN 3014	Principles of Business Finance (CBK)	4
MGT 3613	Managing Human Resources (major)	3
MKT 3013	Principles of Marketing (CBK)	3
	Business or non-business elective (support work)	2

Fourth Year**Fall**

COM 2113 or ENG 2413	Public Speaking or Technical Writing (support work)	3
MGT 4613	Compensating Employees (major)	3
MGT 4623	Staffing Organizations (major)	3
	Upper-division HR elective (major)	3
	Upper-division HR elective (major)	3

Spring

MGT 4663	Training and Developing Employees (major)	3
MGT 4803	Managing Human Resources for Competitive Advantage (major)	3
MGT 4893	Management Strategy (CBK)	3
	Upper-division HR elective (major)	3
	Component Area Option (core)	3

Total Credit Hours: **120.0**

¹ ECO 2013 and ECO 2023 may be taken in either sequence.

² College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Entrepreneurship

The Bachelor of Business Administration Degree in Entrepreneurship is a program of the College. Faculty from across the College teach and advise on its curriculum. The minimum number of semester credit hours for the

Bachelor of Business Administration degree in Entrepreneurship is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Entrepreneurship must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3

MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
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MS 3053	Management Science and Operations Technology	3
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In addition to the Core Curriculum requirements and the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Entrepreneurship must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. 15 semester credit hours of required courses in the major.

ENT 3123	Innovation and Entrepreneurship	3
ENT 4123	Commercialization and Enterprise Planning	3
ENT 4873	Entrepreneurship	3
ENT 4883	Small Business Management	3
ENT 4903	Practicum in Small Business and Entrepreneurship	3

B. 3 semester credit hours of required support work:

FIN 4333	Business Finance for Entrepreneurs	3
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C. 9 semester credit hours of directed electives from the following upper-division entrepreneurship, management of technology or marketing courses:

Select three of the following:	9	
ENT 4223	Managing the Entrepreneurial Team	
ENT 4623	Tools and Objectives of the Social Enterprise	
ENT 4723	Essentials of Global Entrepreneurship	
ENT 4933	Internship in Entrepreneurship	
ENT 4953	Special Studies in Entrepreneurship	
MOT 4143	Introduction to Project Management	
MKT 3063	Personal Selling	
MKT 3083	Marketing Research	
MKT 4953	Special Studies in Marketing (Topic must be Social Media Marketing)	

D. 2 semester credit hours of lower-division or upper-division business or non-business electives.

Total Credit Hours	29
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Course Sequence Guide for B.B.A. Degree in Entrepreneurship

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations.

Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Creative Arts (core)	3

Spring

COM 1053	Business and Professional Speech (CBK)	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
	American History (core)	3

Second Year

Fall		Credit Hours
ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2023	Introductory Microeconomics (core) ¹	3

	Life & Physical Sciences (core)	3
	Government-Political Science (core)	3
	Evaluated for Admissions to the College of Business.	

Spring

ACC 2033	Principles of Accounting II (CBK)	3
ENT 3123	Innovation and Entrepreneurship	3
FIN 3014	Principles of Business Finance (CBK)	4
MS 3043	Business Statistics with Computer Applications II (CBK)	3
	Government-Political Science (core)	3

Third Year

Fall		Credit Hours
GBA 2013	Social and Ethical Issues in Business (CBK)	3
FIN 4333	Business Finance for Entrepreneurs (support work)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3

Spring

BLW 3013	Business Law (CBK)	3
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IS 3003	Principles of Information Systems for Management (CBK)	3
ENT 4123	Commercialization and Enterprise Planning (major)	3
	Language, Philosophy & Culture (core)	3
	Upper-Division ENT or MOT Course Option in Major-see list	3

Fourth Year

Fall		Credit Hours
MKT 3013	Principles of Marketing (CBK)	3
ENT 4873	Entrepreneurship (major)	3
ENT 4883	Small Business Management (major)	3
	Life & Physical Sciences (core)	3
	Upper-division ENT or MOT course option in major- see list	3
Spring		Credit Hours
ENT 4903	Practicum in Small Business and Entrepreneurship (major)	3
MGT 4893	Management Strategy (CBK)	3
	Business or non-business elective	2
	Upper-division ENT or MOT course option in major (Major Elective)	3
	Component Area Option (core)	3

Total Credit Hours: 120.0

¹ ECO 2013 and ECO 2023 may be taken in either sequence.

² College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

- Minor in International Management (p. 56)
- Minor in Management (p. 57)
- Minor in Entrepreneurship for Business Majors (p. 57)
- Minor in Entrepreneurship for Nonbusiness Majors (p. 57)

Minor in International Management

The Minor in International Management is available only to students pursuing a B.B.A. degree. All students pursuing the minor must take the following 18 semester credit hours:

ECO 2013	Introductory Macroeconomics	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4073	International Management	3
MGT 4083	Comparative International Management Practices	3
MKT 3013	Principles of Marketing	3
MKT 4073	International Marketing	3

Total Credit Hours 18

To declare a Minor in International Management, obtain advice, and seek approval of substitutions for course requirements, students must consult with their academic advisor.

Minor in Management

The Minor in Management is available only to students pursuing a B.B.A. degree. All students pursuing the minor must complete 18 semester credit hours.

A. Required courses

MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 3023	Understanding People and Organizations	3

B. Upper-division Management courses

Select 9 semester credit hours of upper-division Management courses that are not part of the Common Body of Knowledge (CBK)	9
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Total Credit Hours	18
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To declare a Minor in Management, obtain advice, and seek approval of substitutions for course requirements, students must consult with their academic advisor.

Minor in Entrepreneurship for Business Majors

The Minor in Entrepreneurship for Business Majors is only open to declared B.B.A. majors in the College of Business. The number of required semester credit hours for this minor is 18.

A. Required Courses

ENT 3123	Innovation and Entrepreneurship	3
ENT 4123	Commercialization and Enterprise Planning	3
ENT 4873	Entrepreneurship	3
ENT 4883	Small Business Management	3
MOT 4143	Introduction to Project Management	3

B. Elective

Select one of the following:	3
ENT 4623	Tools and Objectives of the Social Enterprise
ENT 4723	Essentials of Global Entrepreneurship

Total Credit Hours	18
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In order to qualify for the Minor in Entrepreneurship for Business Majors, students must be in good academic standing and be a declared B.B.A. major in the College of Business.

To declare a Minor in Entrepreneurship for Business Majors, and obtain a minor degree plan, students must consult with their academic advisor.

Minor in Entrepreneurship for Nonbusiness Majors

The Minor in Entrepreneurship for Nonbusiness Majors is available to any declared major at UTSA except Multidisciplinary Studies (MDST) majors or B.B.A. majors in the College of Business. Students seeking a B.B.A. in the College of Business may pursue the Minor in Entrepreneurship for Business Majors. Students seeking a B.S. in Statistics and B.A. in Economics are eligible for the Minor in Entrepreneurship for Nonbusiness Majors.

The number of required semester credit hours for this minor is 21.

A. Required Courses

ACC 2003	Foundations of Accounting	3
ENT 3123	Innovation and Entrepreneurship	3
ENT 4123	Commercialization and Enterprise Planning (prerequisites MGT 3003 and MGT 3013 are waived for nonbusiness ENT minors)	3
ENT 4873	Entrepreneurship	3
ENT 4883	Small Business Management	3
MOT 4143	Introduction to Project Management	3

B. Elective

Select one of the following:	3
ENT 4623	Tools and Objectives of the Social Enterprise
ENT 4723	Essentials of Global Entrepreneurship
MOT 4203	Strategic Management of Technology and Innovation

Total Credit Hours	21
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In order to qualify for the Minor in Entrepreneurship for Nonbusiness Majors, students must be in good academic standing and be a declared major outside of the College of Business. Students seeking a B.A. in Economics or a B.S. in Statistics are eligible for the Minor in Entrepreneurship for Nonbusiness Majors.

To declare a Minor in Entrepreneurship for Nonbusiness Majors, and obtain a minor degree plan, students must consult with their academic advisor.

Department of Management Science and Statistics

Mission Statement

The mission of the Department of Management Science and Statistics is to offer both undergraduate and graduate educational programs that are of high quality and meet the changing needs of the global community; to provide a supportive learning environment for students; to foster the success of our students in their professional careers; and to create an academic environment that stresses excellence in teaching, intellectual contributions, and service. The Department contributes to the missions of the College and the University through research and education in the quantitative sciences. Theory and analysis are applied to a variety of interdisciplinary problems to discover new approaches for meeting the challenges of decision making in a global arena of expanding technology and information.

Department Information

The disciplines of Management Science and Statistics are integral to modern decision-making processes. These interdisciplinary fields emphasize the use of quantitative methods and computers for analyzing, understanding, visualizing, and interpreting data. Management Science seeks to provide a rational basis for decision analysis across a broad spectrum of business functions such as production/operations, marketing, finance, human resources, project management, logistics, and supply chain management. Statistical methods provide analytical tools for research in high-technology and biomedical industries, insurance, and government agencies. Both disciplines offer the opportunity to pursue advanced graduate studies. The Department of Management Science and Statistics offers a Bachelor of Business Administration degree in

Management Science, a Bachelor of Business Administration degree in Actuarial Science, and a Bachelor of Science degree in Statistics. The department also offers minors in Actuarial Science, Adaptive Decision Models for Business, Statistics, and Management Science, which are open to all majors in the University. In addition, certificates are offered in Business Analytics, and Operations and Supply Chain Management

Department Honors

The Department of Management Science and Statistics offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for Honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed honors thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the Department of Management Science and Statistics office for additional information. Department honors can be attained independent of, or in addition to, University Honors. In order to have departmental honors noted on the transcript, students must submit a letter of request for departmental honors to the Department Chair by Census Date of their last semester.

- Bachelor of Business Administration Degree in Actuarial Science (p. 58)
- Bachelor of Business Administration Degree in Management Science (p. 60)
- Bachelor of Science Degree in Statistics (p. 62)

Bachelor of Business Administration Degree in Actuarial Science

Actuarial Science is a discipline that uses mathematics and statistical models to assess and manage risk and to solve emerging financial and social problems. Graduates' unique blend of analytical and business skills are especially valuable in the insurance and financial services industry. They apply their skills to calculations in life, health, social, and casualty insurance, annuities and pensions. Traditionally, they have been involved in developing probability tables for natural disasters, unemployment, etc. There is an increasing need for trained actuaries in the insurance industry. The Bachelor of Business Administration (B.B.A.) in Actuarial Science provides students the opportunity to acquire the quantitative and business skills to prepare them for a career as an actuary. The minimum number of semester credit hours for the B.B.A. degree in Actuarial Science is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Actuarial Science must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for the degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (Satisfies Mathematics Core Curriculum requirement. Actuarial Science majors must take MAT 1214 in lieu of MAT 1033.)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 3023 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK),

all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. Required Mathematics and Statistics courses

MAT 1224	Calculus II	4
MAT 2214	Calculus III	4
STA 3513	Probability and Statistics	3
STA 3523	Mathematical Statistics	3
STA 4713	Applied Regression Analysis	3
STA 4753	Time-Series Analysis	3

B. Additional Courses

Select two courses from the following: 6

FIN 4523	Introduction to Risk Management	
FIN 4813	Property-Liability Insurance Finance	
FIN 4823	Life and Health Insurance Finance	
MS 3073	Business Analytics	
STA 3023	Statistical Mathematics	
STA 4133	Introduction to Programming and Data Management in SAS	
STA 4643	Introduction to Stochastic Processes	
STA 4933	Internship in Statistics	

C. Examination Preparation

STA 4961	Actuarial Science Examination Preparation (to be taken two semesters)	2
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Total Credit Hours 28

Course Sequence Guide for B.B.A. Degree in Actuarial Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
MAT 1214	Calculus I (core and CBK) ²	4
Spring		
COM 1053	Business and Professional Speech (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
ECO 2013	Introductory Macroeconomics ^{1,2}	3

STA 3023	Statistical Mathematics (CBK)	3
MAT 1224	Calculus II (major)	4

Second Year

Fall

ACC 2013	Principles of Accounting I	3
ECO 2023	Introductory Microeconomics ¹	3
MAT 2214	Calculus III (major)	4
STA 3003	Applied Statistics (CBK)	3
Language, Philosophy & Culture (core)		3
Evaluated for Admission to the College of Business		

Spring

ACC 2033	Principles of Accounting II	3
FIN 3014	Principles of Business Finance (CBK)	4
STA 3513	Probability and Statistics (major)	3
American History (core)		3
Life & Physical Sciences (core)		3

Third Year

Fall

MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Upper-division FIN or STA Directed Elective (support work)		3
STA 3523	Mathematical Statistics (major)	3

Spring

IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
STA 4713	Applied Regression Analysis (major)	3
Upper-division FIN or STA Directed Elective (support work)		3

Fourth Year

Fall

GBA 2013	Social and Ethical Issues in Business (CBK)	3
STA 4753	Time-Series Analysis (major)	3
STA 4961	Actuarial Science Examination Preparation (support work)	1
Component Area Option (core)		3
Government-Political Science (core)		3

Spring

BLW 3013	Business Law (CBK)	3
MGT 4893	Management Strategy (CBK)	3
STA 4961	Actuarial Science Examination Preparation (support work)	1
Creative Arts (core)		3

Life & Physical Sciences (core)	3
Total Credit Hours:	120.0

- ECO 2013 and ECO 2023 may be taken in either sequence.
- College of Business students should take MAT 1214 and ECO 2013 satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Management Science

Solving problems and making decisions are integral parts of every organization's daily operations. The discipline of Management Science focuses on the development and application of scientific and mathematical modeling to aid organizations in making these decisions. Students will have the opportunity to develop and apply analytical models and to acquire essential computer skills necessary in the increasingly technical business environments. Many organizations hire management science majors for managerial positions because of their computing skills and problem-solving abilities. These skills are essential in business environments that are seeking increased efficiency and productivity. The focus of this degree is on applications and appropriate software with a view toward how a manager can effectively apply quantitative models to improve the decision-making process.

The diverse courses offered provide students with an opportunity to specialize in professional fields such as operations and logistics. Thus, students have the option of emphasizing operations and logistics or using their breadth of marketable skills and abilities to solve problems in a variety of organizations and functional areas. The degree is designed to prepare students for careers in manufacturing, materials management, service operations, procurement, third party logistics, transportation processes, and management consulting. Since management science majors study a wide variety of topics dealing with daily activities and problems faced by managers in today's ever-changing world, many career tracks are available to them. The minimum number of semester credit hours required for the Bachelor of Business Administration in Management Science is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Management Science must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (Satisfies Mathematics Core Curriculum requirement. Actuarial Science majors must take MAT 1214 in lieu of MAT 1033.)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 3023 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Management Science must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. Required Management Science courses

MS 3403	Logistics Management	3
MS 4333	Project Management	3
MS 4343	Production/Operations Management	3

B. Business upper-division electives

Select 5 of the following:		15
ECO 3123	Introduction to Econometrics and Business Forecasting	
FIN 4523	Introduction to Risk Management	
FIN 4873	Computer Modeling of Financial Applications	
MKT 3083	Marketing Research	
MS 3063	Decision Support Systems	
MS 3073	Business Analytics	
MS 3313	Business Applications of Statistics	
MS 3413	Purchasing and Inventory Management	
MS 4313	Six Sigma and Lean Operations	
MS 4323	Simulation Applications in Business	
MS 4353	Service Operations Management	
MS 4363	Quality Management and Control	
MS 4383	Applied Forecasting in Operations	
MS 4543	Supply Chain Management	
MS 4913	Independent Study in Management Science	
MS 4933	Internship in Management Science	
MS 4953	Special Studies in Management Science	
STA 3003	Applied Statistics	
STA 3313	Experiments and Sampling	
STA 4133	Introduction to Programming and Data Management in SAS	
STA 4753	Time-Series Analysis	
STA 4803	Statistical Quality Control	

To substitute another course for one of the above electives, a student should submit a petition to their academic advisor and receive approval from the chair of the Management Science and Statistics department or department designee before registering for the course.

C. Lower-division or upper-division business or non-business electives

Select 5 semester credit hours of lower-division or upper-division business or non-business electives		5
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Total Credit Hours **29**

Course Sequence Guide for B.B.A. Degree in Management Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

For options in designing and selecting career tracks and/or certificates, contact the chair of the Management Science and Statistics Department or department designee.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
IS 1403	Business Information Systems Fluency (CBK)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3

Spring

COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	American History (core)	3

Second Year

Fall

ECO 2023	Introductory Microeconomics ¹	3
ACC 2013	Principles of Accounting I (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
	Government-Political Science (core)	3
	Life & Physical Sciences (core)	3
	Evaluated for Admission to the College of Business	

Spring

ACC 2033	Principles of Accounting II (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
	Language, Philosophy & Culture (core)	3
	Life & Physical Sciences (core)	3
	Government-Political Science (core)	3

Third Year

Fall

GBA 2013	Social and Ethical Issues in Business (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MS 4343	Production/Operations Management (major)	3
	Upper-division Business elective (support work)	3

Spring

BLW 3013	Business Law (CBK)	3
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FIN 3014	Principles of Business Finance (CBK)	4
IS 3003	Principles of Information Systems for Management (CBK)	3
MS 3403	Logistics Management (major)	3
MS 4333	Project Management (major)	3
Fourth Year		
Fall		
MKT 3013	Principles of Marketing (CBK)	3
	Business or non-business elective (support work)	3
	Upper-division Business elective (support work)	3
	Upper-division Business elective (support work)	3
	Creative Arts (core)	3
Spring		
MGT 4893	Management Strategy (CBK)	3
	Business or non-business elective (support work)	2
	Upper-division Business elective (support work)	3
	Upper-division Business elective (support work)	3
	Component Area Option (core)	3
Total Credit Hours:		120.0

¹ ECO 2013 and ECO 2023 may be taken in either sequence.

² College of Business students should take MAT 1033 and ECO 2013 satisfy both Core Curriculum and CBK requirements.

Bachelor of Science Degree in Statistics

Statistics is a science that deals with principles and procedures for obtaining and processing information in order to make decisions in the face of uncertainty. In particular, it deals with collection, organization, analysis, and interpretation of numerical information to answer questions in almost every aspect of modern-day life. Statistical methods are used to address complex questions common in business, government, and science. Employers such as research divisions in pharmaceutical companies, clinical research units at medical centers, quality control or reliability departments in manufacturing companies, corporate planning and financial analysis units, and government agencies require persons with advanced quantitative skills.

The Bachelor of Science degree in Statistics provides students with access to such skills preparing them for careers as statistical analysts or for further graduate academic training. The minimum number of semester credit hours required for the Bachelor of Science degree in Statistics is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Statistics must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Required courses in the computational and mathematical sciences

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III	4

B. Courses required for the major

1. Required Statistic courses

STA 3003	Applied Statistics	3
STA 3013	Multivariate Analysis for the Life and Social Sciences	3
STA 3023	Statistical Mathematics	3
STA 3313	Experiments and Sampling	3
STA 3513	Probability and Statistics	3
STA 3523	Mathematical Statistics	3
STA 4133	Introduction to Programming and Data Management in SAS	3
STA 4233	Statistical Applications Using SAS Software	3
STA 4713	Applied Regression Analysis	3
STA 4723	Introduction to the Design of Experiments	3
2. Select four of the following:		12
MS 3073	Business Analytics	
MS 4363	Quality Management and Control	
STA 3813	Discrete Data Analysis	
STA 4143	Data Mining	
STA 4643	Introduction to Stochastic Processes	
STA 4753	Time-Series Analysis	
STA 4903	Applied Survival Analysis	
STA 4933	Internship in Statistics	

C. Electives in disciplines where statistics is actively applied and practiced.

Nine semester credit hours must be upper division. The department has given pre-approval to the following plans of study for specializations in actuarial science, biology, business, education, mathematics, psychology, and social sciences. Other specialization plans and the relevant courses may be submitted for approval to the designated Statistics faculty member.

1. Specialization in Actuarial Science

ACC 2013	Principles of Accounting I	
ECO 2013	Introductory Macroeconomics	
ECO 2023	Introductory Microeconomics	
FIN 3014	Principles of Business Finance	
FIN 3023	Intermediate Corporate Finance	
or FIN 4873	Computer Modeling of Financial Applications	
STA 4961	Actuarial Science Examination Preparation (to be taken two semesters)	

2. Specialization in Biology

BIO 2313	Genetics
BIO 3283	Principles of Ecology
BIO 3323	Evolution
BIO 3333	Plants and Society
BIO 3433	Neurobiology
BIO 4033	Conservation Biology

3. Specialization in Business

ECO 3123	Introduction to Econometrics and Business Forecasting
MKT 3083	Marketing Research
MS 3063	Decision Support Systems
MS 4313	Six Sigma and Lean Operations
MS 4343	Production/Operations Management
MS 4363	Quality Management and Control

4. Specialization in Education

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society
EDP 3203	Learning and Development in the Secondary School Adolescent
EDU 2103	Social Foundations for Education in a Diverse U.S. Society
ESL 3023	Second Language Teaching and Learning in EC-6
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society
SPE 3603	Introduction to Special Education

5. Specialization in Mathematics

MAT 2233	Linear Algebra
MAT 3213	Foundations of Analysis
MAT 3223	Complex Variables
MAT 3613	Differential Equations I
MAT 3633	Numerical Analysis
MAT 4213	Real Analysis I
or MAT 4313	Applied Combinatorics

6. Specialization in Psychology

PSY 1013	Introduction to Psychology
PSY 2503	Developmental Psychology
PSY 3403	Experimental Psychology
PSY 3413	Experimental Psychology Laboratory
Two additional psychology courses at the 3000 or 4000 level.	

7. Specialization in Social Sciences

SOC 1013	Introduction to Sociology
SOC 3223	Population Dynamics and Demographic Techniques
SOC 3323	Introduction to Social Research
SOC 3373	Qualitative Research Methods
SOC 3393	Quantitative Research Methods

One additional sociology course at the 3000 or 4000 level.

D. Lower-division or upper-division business or non-business electives.

Select 6 semester credit hours of lower-division or upper-division business or non-business electives. 6

Total Credit Hours **78**

Course Sequence Guide for B.S. Degree in Statistics

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major) ¹	4
STA 3003	Applied Statistics (major) ²	3
STA 3023	Statistical Mathematics (major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
STA 3513	Probability and Statistics (major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
MAT 1224	Calculus II (major)	4
American History (core)		3
Life & Physical Sciences (core)		3

Second Year

Fall		
ECO 2013	Introductory Macroeconomics (core)	3
MAT 2214	Calculus III (major)	4
STA 3313	Experiments and Sampling (major)	3
STA 3523	Mathematical Statistics (major)	3
STA 4133	Introduction to Programming and Data Management in SAS (major)	3

DECLARE MAJOR

Spring

STA 3013	Multivariate Analysis for the Life and Social Sciences (major)	3
STA 4233	Statistical Applications Using SAS Software (major)	3
American History (core)		3
Government-Political Science (core)		3
Life & Physical Sciences (core)		3

Third Year

Fall		
STA 4713	Applied Regression Analysis (major)	3
STA 4753	Time-Series Analysis (major)	3
Course option in specialization track		3
Course option in specialization track		3
Language, Philosophy & Culture (core)		3

Spring

STA 4723	Introduction to the Design of Experiments (major)	3
	Business or non-business elective (support work)	3
	Course option in specialization track (support work)	3
	Course option in major	3
	Government-Political Science (core)	3
Fourth Year		
Fall		
	Course option in major	3
	Course option in major	3
	Course option in specialization track (support work)	3
	Course option in specialization track (support work)	3
	Course option in specialization track (support work)	3
Spring		
	Business or non-business elective (support work)	3
	Course option in major	3
	Creative Arts (core)	3
	Component Area Option (core)	3
Total Credit Hours:		120.0

¹ Students must take Math Placement Test to register for MAT 1214. Beginning math course will be determined by Math Placement Test scores.

² STA 3003 is prerequisite for other required courses.

- Minor in Actuarial Science (p. 64)
- Minor in Adaptive Decision Models for Business (p. 64)
- Minor in Statistics (p. 64)
- Minor in Management Science (p. 65)

Minor in Actuarial Science

The Minor in Actuarial Science is open to all majors in the University. All students pursuing the minor must complete 18 semester credit hours.

A. Required Business courses

ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics	3

B. Select four of the following courses 12

STA 3513	Probability and Statistics	
STA 3523	Mathematical Statistics	
STA 4643	Introduction to Stochastic Processes	
STA 4713	Applied Regression Analysis	
STA 4753	Time-Series Analysis	
STA 4933	Internship in Statistics	

Total Credit Hours 18

To declare a Minor in Actuarial Science, obtain advice, and seek approval of substitutions for course requirements, students must consult with their academic advisor.

Minor in Adaptive Decision Models for Business

The Minor in Adaptive Decision Models for Business is open to all majors in the University. All students pursuing the minor must complete 18 semester credit hours.

A. Course option

Select one of the following:		3
CS 3333	Mathematical Foundations of Computer Science	
ME 3113	Measurements and Instrumentation	
MS 3053	Management Science and Operations Technology	

B. Additional courses

ACC 2013	Principles of Accounting I	3
FIN 3003	Survey of Finance	3
or FIN 3014	Principles of Business Finance	

C. Models

Select 6 semester credit hours of the following: 6

Analytical Models

MS 3063	Decision Support Systems	
MS 3073	Business Analytics	
MS 3313	Business Applications of Statistics	
MS 4323	Simulation Applications in Business	
MS 4333	Project Management	
MS 4383	Applied Forecasting in Operations	

Operational Models

MS 3403	Logistics Management	
MS 3413	Purchasing and Inventory Management	
MS 4313	Six Sigma and Lean Operations	
MS 4343	Production/Operations Management	
MS 4353	Service Operations Management	
MS 4363	Quality Management and Control	
MS 4543	Supply Chain Management	

D. Upper-division electives

Select 3 semester credit hours of upper-division electives in disciplines where quantitative methods are actively applied and practiced. These courses should be approved by the designated management science faculty member. 3

Total Credit Hours 18

To declare a minor in Adaptive Decision Models for Business and seek approval of substitutions for course requirements, students must consult with their academic advisor or the designated management science faculty member.

Minor in Statistics

The Minor in Statistics is open to all majors in the University. All students pursuing the minor must complete 18 semester credit hours.

A. Sequence options

Select two courses from one of the following four options: 6

1. Option 1

STA 1403	Probability and Statistics for the Biosciences	
STA 3003	Applied Statistics	

2. Option 2

POL 2703	Scope and Methods in Political Science	
PSY 2073	Statistics for Psychology	
3. Option 3		
MS 1023	Business Statistics with Computer Applications I	
MS 3043	Business Statistics with Computer Applications II	
4. Option 4		
STA 3003	Applied Statistics	
Select one of the following:		
STA 2303	Applied Probability and Statistics for Engineers	
STA 3513	Probability and Statistics	
STA 3533	Probability and Random Processes	
B. Select four of the following courses		12
MS 3073	Business Analytics	
STA 3013	Multivariate Analysis for the Life and Social Sciences	
STA 3023	Statistical Mathematics	
STA 3313	Experiments and Sampling	
STA 3433	Applied Nonparametric Statistics	
STA 3813	Discrete Data Analysis	
STA 4133	Introduction to Programming and Data Management in SAS	
STA 4143	Data Mining	
STA 4233	Statistical Applications Using SAS Software	
STA 4713	Applied Regression Analysis	
STA 4723	Introduction to the Design of Experiments	
STA 4753	Time-Series Analysis	
STA 4803	Statistical Quality Control	
or MS 4363	Quality Management and Control	
STA 4903	Applied Survival Analysis	
STA 4933	Internship in Statistics	
STA 4953	Special Studies in Statistics	
Total Credit Hours		18

To declare a Minor in Statistics, obtain advice, and seek approval of substitutions for course requirements, students must consult with their academic advisor or the designated Statistics faculty member.

Minor in Management Science

The Minor in Management Science is open to all majors in the University. All students pursuing the minor must complete 18 semester credit hours.

A. Required courses

MS 3053	Management Science and Operations Technology	3
MS 4343	Production/Operations Management	3

B. Select four of the following courses

ECO 3123	Introduction to Econometrics and Business Forecasting	
FIN 4523	Introduction to Risk Management	
FIN 4873	Computer Modeling of Financial Applications	
MKT 3083	Marketing Research	
MS 3063	Decision Support Systems	
MS 3073	Business Analytics	
MS 3313	Business Applications of Statistics	
MS 3403	Logistics Management	

MS 3413	Purchasing and Inventory Management	
MS 4313	Six Sigma and Lean Operations	
MS 4323	Simulation Applications in Business	
MS 4333	Project Management	
MS 4353	Service Operations Management	
MS 4363	Quality Management and Control	
MS 4383	Applied Forecasting in Operations	
MS 4543	Supply Chain Management	
MS 4913	Independent Study in Management Science	
MS 4933	Internship in Management Science	
MS 4953	Special Studies in Management Science	
STA 3003	Applied Statistics	
STA 3313	Experiments and Sampling	
STA 4133	Introduction to Programming and Data Management in SAS	
STA 4753	Time-Series Analysis	
STA 4803	Statistical Quality Control	

Total Credit Hours **18**

To declare a Minor in Management Science, obtain advice, and seek approval of substitutions for course requirements, students must consult with their academic advisor.

- Certificate in Business Analytics (p. 65)
- Certificate in Operations and Supply Chain Management (p. 66)

Certificate in Business Analytics

The Business Analytics certificate is designed to prepare business students with a foundational knowledge in analytics. It certifies to employers that students awarded the certificate have completed coursework that will help them understand different forms of analytics (descriptive, predictive, and prescriptive) and the methods used in each. Moreover, this certificate program will help students learn cutting-edge techniques to sift through large volumes of data and understand how analytics can help improve decisions throughout an organization.

To earn a Business Analytics certificate, students must earn 15 semester credit hours as follows:

A. Required courses

MS 3073	Business Analytics	3
STA 4133	Introduction to Programming and Data Management in SAS	3
STA 4233	Statistical Applications Using SAS Software	3

B. Select one of the following

MS 3063	Decision Support Systems	
STA 4143	Data Mining	

C. Select one of the following

MS 3313	Business Applications of Statistics	3
STA 3013	Multivariate Analysis for the Life and Social Sciences	

Total Credit Hours **15**

This certificate is open only to College of Business students. To apply for the Business Analytics Certificate, students should consult with Department of Management Science and Statistics for specific information about certificate requirements and consult with their academic

advisors to verify that they have met all university requirements. All courses used to satisfy the requirements of this undergraduate certificate program must be college-level courses taken at UTSA.

Certificate in Operations and Supply Chain Management

This certificate is designed to prepare business students with a foundational knowledge in operations and supply chain management (OSCM). It certifies to employers that students awarded the certificate have completed coursework that help them understand a myriad of issues, challenges, problems, and decision tools that relate to the internal and external flow of materials and requisite knowledge. Production/operations management, logistics management, and procurement topics are included to resolve the myriad of complex problems facing organizations. Moreover, this certificate program will help students learn cutting edge techniques and best practices to leverage their operations and supply chain complexities to achieve competitive advantage.

To earn an Operations and Supply Chain Management Certificate (OSCM), students must earn 15 semester credit hours as follows:

A. Required courses

MS 3403	Logistics Management	3
MS 4543	Supply Chain Management	3

B. Select one of the following

MS 4343	Production/Operations Management	3
MS 4353	Service Operations Management	3

C. Select one of the following

MS 4313	Six Sigma and Lean Operations	3
MS 4363	Quality Management and Control	3

D. Select one of the following

MS 3413	Purchasing and Inventory Management	3
MS 4383	Applied Forecasting in Operations	3

Total Credit Hours **15**

This certificate is open only to College of Business students. To apply for the Operations and Supply Chain Management Certificate, students should consult with Department of Management Science and Statistics for specific information about certificate requirements and consult with their academic advisors to verify that they have met all university requirements. All courses used to satisfy the requirements of this undergraduate certificate program must be college-level courses taken at UTSA.

Department of Marketing

The Department of Marketing offers a Bachelor of Business Administration (B.B.A.) degree in Marketing and a Minor in Marketing. In addition, the Department offers a B.B.A. degree in Sport, Event and Tourism Management.

The marketing degree provides students with the theory and methods used by businesses to develop strategies for designing, pricing, distributing, and promoting the firm's offerings. Courses present practical treatment of such topics as marketing strategy, customer demand analysis, market segmentation, promotion management, consumer behavior and decision making, and international marketing. Graduates can choose from a wide range of careers including marketing

management, advertising, personal selling, retailing, international marketing, and marketing research.

The Minor in Marketing is available only to students pursuing a B.B.A. degree.

The sport, event, and tourism management degree provides the opportunity for a comprehensive business education that can allow students to enter into careers in sport management and marketing, event management, travel and tourism, and destination marketing.

Department Honors

The Department of Marketing offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Marketing and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the Marketing faculty. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Marketing are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by a supervising faculty sponsor in Marketing and the UPC. Students interested in this program should contact the UPC through the Department of Marketing office for additional information. Department Honors can be attained independent of, or in addition to, University Honors. In order to have departmental honors noted on the transcript, students must submit a letter of request for departmental honors to the Department Chair by Census Date of their last semester.

- Bachelor of Business Administration Degree in Marketing (p. 66)
- Bachelor of Business Administration Degree in Sport, Event and Tourism Management (p. 68)

Bachelor of Business Administration Degree in Marketing

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Marketing must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Marketing must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033 Algebra with Calculus for Business

Degree Requirements

A. Required upper-division courses in the major

MKT 3083	Marketing Research	3
MKT 4073	International Marketing	3
MKT 4093	Consumer Behavior	3
MKT 4893	Marketing Capstone	3
9 semester credit hours of upper-division (3000-4000 level) Marketing (MKT) electives		9

B. Support work within the College of Business

Select one of the following:		3
ACC 3123	Cost Analysis	
ECO 3033	Economics of Managerial Decisions	
ECO 3053	Intermediate Macroeconomics	
FIN 3033	Principles of Investment	
FIN 3313	Money and Banking	
IS 4153	Web Site Development	
MS 4343	Production/Operations Management	
MS 4543	Supply Chain Management	

C. Lower-division or upper-division business or non-business electives

Select 5 semester credit hours of lower-division or upper-division business or non-business electives.		5
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Total Credit Hours **29**

Course Sequence Guide for B.B.A. Degree in Marketing

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Creative Arts (core)		3

Spring

COM 1053	Business and Professional Speech (CBK)	3
ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3

IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core) American History (core)	3
Second Year		
Fall		
ECO 2023	Introductory Microeconomics ¹	3
ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Language, Philosophy & Culture (core)		3
Life & Physical Sciences (core)		3
Evaluated for Admission to the College of Business		
Spring		
ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Life & Physical Sciences (core)		3
Government - Political Science (core)		3
Third Year		
Fall		
GBA 2013	Social and Ethical Issues in Business (CBK)	3
IS 3003	Principles of Information Systems for Management	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Spring		
BLW 3013	Business Law (CBK)	3
FIN 3014	Principles of Business Finance (CBK)	4
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3083	Marketing Research (major)	3
MKT 4093	Consumer Behavior (major)	3
Fourth Year		
Fall		
MKT 4073	International Marketing (major)	3
Business or non-business elective (support work)		3
Component Area Option (core)		3
Upper-division MKT elective (3xxx or 4xxx level) (major)		3
Upper-division MKT elective (3xxx or 4xxx level) (major)		3
Spring		
MGT 4893	Management Strategy (CBK)	3
MKT 4893	Marketing Capstone (major)	3
Business or non-business elective (support work)		2
Support work elective		3
Upper-division MKT elective (3xxx or 4xxx level) (major)		3
Total Credit Hours:		120.0

- ¹ ECO 2013 and ECO 2023 may be taken in either sequence.
- ² College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Sport, Event and Tourism Management

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Sport, Event and Tourism Management must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC 2013	Principles of Accounting I	3
ACC 2033	Principles of Accounting II	3
BLW 3013	Business Law	3
COM 1053	Business and Professional Speech	3
ECO 2013	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
ECO 2023	Introductory Microeconomics	3
FIN 3014	Principles of Business Finance	4
GBA 2013	Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
IS 3003	Principles of Information Systems for Management	3
MAT 1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT 3003	Business Communication and Professional Development	3

MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MGT 4893	Management Strategy (taken in semester of graduation)	3
MKT 3013	Principles of Marketing	3
MS 1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Gateway Course

Students pursuing the B.B.A. degree in Sport, Event and Tourism Management must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1033	Algebra with Calculus for Business
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Degree Requirements

A. Required courses in the major

SET 2123	Survey of Tourism	3
SET 3233	Sport Management	3
SET 3333	Event Management	3
SET 4543	Destination Marketing	3
Select three additional sport, event and tourism courses from the following:		9
BLW 4153	Tourism Law	
MKT 3063	Personal Selling	
MKT 4143	Sports Marketing	
MS 4333	Project Management	
MS 4353	Service Operations Management	
SET 3043	Attractions Management	
SET 3283	Sport and Event Media Relations	
SET 3313	Sport Tourism and Events	
SET 3413	Resort and Club Management	
SET 3543	Economics of Tourism and Leisure	
SET 4233	Sport Facility and Event Management	
SET 4811	Special Topics in Sport, Event and Tourism Management	
SET 4812	Special Topics in Sport, Event and Tourism Management	
SET 4813	Special Topics in Sport, Event and Tourism Management	
SET 4921	Independent Study in Sport, Event and Tourism Management	

SET 4922	Independent Study in Sport, Event and Tourism Management	
SET 4923	Independent Study in Sport, Event and Tourism Management	
SET 4941	Internship in Sport, Event and Tourism Management	
SET 4942	Internship in Sport, Event and Tourism Management	
SET 4943	Internship in Sport, Event and Tourism Management	

B. Support work courses within the College of Business

Select one of the following:		3
ECO 3193	International Economics	
ECO 4303	Economics of Developing Countries	
FIN 4613	Introduction to International Finance	
MGT 4073	International Management	
MGT 4083	Comparative International Management Practices	
MKT 4073	International Marketing	

C. Lower-division or upper-division business or non-business electives

Select 5 semester credit hours of lower-division or upper-division business or non-business electives (the following courses are recommended):		5
KIN 2441	Management and Organization in Kinesiology and Sports	
NPO 3003	Fundraising in Nonprofit Agencies	
NPO 3013	Introduction to Nonprofit Agencies	

Total Credit Hours	29
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Course Sequence Guide for B.B.A. Degree in Sport, Event and Tourism Management

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with their academic advisor for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1033	Algebra with Calculus for Business (core and CBK) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Creative Arts (core)	3
Spring		
COM 1053	Business and Professional Speech (CBK)	3

ECO 2013	Introductory Macroeconomics (core and CBK) ^{1,2}	3
IS 1403	Business Information Systems Fluency (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	American History (core)	3
Second Year		
Fall		
ECO 2023	Introductory Microeconomics ¹	3
ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
	Language, Philosophy & Culture (core)	3
	Life & Physical Sciences (core)	3
	Evaluated for Admission to the College of Business	
Spring		
ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
SET 2123	Survey of Tourism (major)	3
	Government-Political Science (core)	3
Third Year		
Fall		
GBA 2013	Social and Ethical Issues in Business (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
SET 3233	Sport Management (major)	3
	Government-Political Science (core)	3
Spring		
IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
SET 3333	Event Management (major)	3
	Life & Physical Sciences (core)	3
	SET elective (major)	3
Fourth Year		
Fall		
BLW 3013	Business Law (CBK)	3
FIN 3014	Principles of Business Finance (CBK)	4
	Component Area Option (core)	3
	Business or non-business elective (support work)	2
	SET elective (major)	3
Spring		
MGT 4893	Management Strategy (CBK)	3
SET 4543	Destination Marketing (major)	3
	Business or non-business elective (support work)	3
	SET elective (major)	3

College of Business elective (support work)	3
Total Credit Hours:	120.0

¹ ECO 2013 and ECO 2023 may be taken in either sequence.

² College of Business students should take MAT 1033 and ECO 2013 to satisfy both Core Curriculum and CBK requirements.

Minor in Marketing

The Minor in Marketing is available only to students pursuing a B.B.A. degree. All students pursuing the Minor in Marketing must complete 18 semester credit hours.

A. Required coursework

MKT 3013	Principles of Marketing	3
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B. Additional courses

Select 5 of the following courses: 15

MKT 3043	Advertising	
MKT 3063	Personal Selling	
MKT 3083	Marketing Research	
MKT 3113	Retailing	
MKT 4063	Multicultural Marketing	
MKT 4073	International Marketing	
MKT 4093	Consumer Behavior	
MKT 4143	Sports Marketing	
MKT 4233	Integrated Marketing Communications	
MKT 4953	Special Studies in Marketing	

Total Credit Hours 18

To declare a Minor in Marketing, obtain advice, and seek approval of substitutions for course requirements, students must consult their academic advisor.

College of Education and Human Development

Vision Statement

The College of Education and Human Development (COEHD) at The University of Texas at San Antonio will be an international model for developing inclusive, transformative leaders guided by principles of community, equity, respect for diversity, integrity, service, and scholarship.

Mission Statement

The College of Education and Human Development will create a democratic, collaborative learning organization in a way that:

- promotes equity, fairness, and accountability
- recognizes a healthy balance among scholarship, teaching, and service
- develops and applies new knowledge of best practices
- prepares educators/leaders to succeed in diverse contexts
- retains students, faculty, and staff
- builds community within and at large
- fosters the holistic development of all its members
- uses resources effectively and efficiently

so that the College graduates citizens who are engaged in productive contributions to self, society, and the global community.

General Information

The College of Education and Human Development is made up of six departments: Bicultural-Bilingual Studies; Counseling; Educational Leadership and Policy Studies; Educational Psychology; Kinesiology, Health, and Nutrition; and Interdisciplinary Learning and Teaching.

Seven undergraduate degrees are offered within the College: the Bachelor of Applied Arts and Sciences in Infancy and Childhood Studies, the Bachelor of Arts in Interdisciplinary Studies, the Bachelor of Arts in Mexican American Studies, the Bachelor of Arts in Women's Studies, the Bachelor of Science in Health, and the Bachelor of Science in Kinesiology, and the Bachelor of Science in Nutrition and Dietetics. Minors are also offered in African American Studies, Athletic Coaching, Bicultural Studies, English as a Second Language, Community Health, Wellness, and Women's Studies. For more information related to the College, consult the webpage: <http://education.utsa.edu>.

Advising and Certification Center

Academic Advising

Academic advising services are provided for students admitted to or currently enrolled at UTSA in the following majors: Health, Kinesiology, Interdisciplinary Studies, Infancy and Childhood Studies, Mexican American Studies, Nutrition and Dietetics, and Women's Studies. Advising services are also provided for students seeking a teaching certificate for those Secondary and All-Level content areas that are available at UTSA. This includes students pursuing Secondary and All-

Level certification, students with earned baccalaureate degrees who would like to become certified as teachers, and teachers wishing to add additional certificates to their credentials.

Certification

The University of Texas at San Antonio is approved by the State Board for Educator Certification (SBEC) to offer teacher certificate programs for Texas certification as elementary, middle school, and high school classroom teachers.

Students interested in pursuing elementary and middle school teacher certification will major in Interdisciplinary Studies and follow the appropriate certification program for the desired level of the certificate. Students who would like to become high school teachers will major in the academic area in which certification is desired and simultaneously follow the certification program for this teaching field. Students pursuing All-Level certification will follow specialized All-Level programs in Art, Music or Kinesiology.

Additional information about UTSA certification programs and teacher certification guidelines is available in the Teacher Certification section of this catalog and in the COEHD Advising and Certification Center.

Minor in African American Studies

The Minor in African American Studies provides an interdisciplinary approach to the political, cultural, historical, and social experiences of African Americans in the United States, and people of African descent globally. Literature and research methods drawn from several disciplines enable students to enhance their understanding of African Americans' unique social circumstances, contributions, and heritage. The mission of the African American Studies program at UTSA is to promote academic and professional excellence. We achieve this goal by enhancing cultural competency skills, enriching the theoretical knowledge base and practical skills set of students related to working with diverse populations, and advancing critical thinking skills related to multiple facets of the African American experience and the African Diaspora.

All students pursuing a Minor in African American Studies must complete 18 semester credit hours, at least 12 hours of which must be at the upper-division level.

A. Required courses:

AAS 2013	Introduction to African American Studies	3
AAS 2113	African American Culture, Leadership and Social Issues	3

B. Two African American Studies courses selected from the following:

AAS 3013	African American Cultural Experiences	
AAS 3113	African American Studies Research Seminar	
AAS 3123	Civil Rights Movement & African American Education	
AAS 3133	African Americans in Higher Education	
AAS 4013	Topics in African American Studies	

C. Two courses selected from the following:

AMS 3343	Studies in Race and Ethnicity	6
BBL 2033	Multiculturalism in the Southwest	
BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	

EDU 2103	Social Foundations for Education in a Diverse U.S. Society
ENG 2383	Multiethnic Literatures of the United States
ENG 3613	African American Literature
GRG 3513	Urban Geography
HIS 3113	North American Indian Histories
HIS 3563	African American History to the Civil War
HIS 3573	African American History since the Civil War
HIS 3603	Occupation, Revolution and Nation in Africa
HIS 3613	Migration, Society and Culture in Africa
HIS 3623	History of the Civil Rights Movement
LGS 3113	Minorities and the Law
MUS 2663	History and Styles of Jazz
POL 1213	Civil Rights in Texas and America (when the topic is Civil Rights)
POL 3203	African American Political Thought
POL 3303	Race, Ethnicity and Public Policy
SOC 4053	Health Care System
Other course substitutions require pre-approval of the advisor and program director.	

Students may take the following courses under section C with approval of program director:

AAS 4913	Independent Study
AAS 4933	Internship in African American Studies

Total Credit Hours **18**

To declare a Minor in African American Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Bicultural-Bilingual Studies

The Department of Bicultural-Bilingual Studies offers a Bachelor of Arts (B.A.) degree in Mexican American Studies as well as Minors in Bicultural Studies and English as a Second Language. The B.A. in Mexican American Studies prepares students to enter graduate school or pursue a career as an educator, researcher, community leader, or community advocate. The Department also offers courses that may be used to fulfill the Core Curriculum requirements or that may be taken as support courses for programs within the University or as electives. Courses in bicultural-bilingual studies offer students the opportunity to prepare for bilingual and/or second language teaching and give insights into bilingual and multicultural functions in society. Courses in teaching English as a Second Language (ESL) offer students the opportunity to learn appropriate methods and strategies for teaching at the elementary, secondary, and adult levels. Courses are designed for students who plan to teach second languages, but are also designed for those who intend to teach in other areas or to enter fields that rely heavily on an understanding of language learning and bilingualism. In addition, the Department offers advanced courses in English for international students that are appropriate for both graduate and undergraduate students.

The Department of Bicultural-Bilingual Studies offers coursework required for teacher certification in the area of bilingual education and ESL. Students seeking certification in this area should complete requirements for the Early Childhood–Grade 6 Bilingual Generalist Certificate, the

Grades 4–8 Bilingual Generalist Certificate, the Early Childhood–Grade 6 ESL Generalist Certificate, or the Grades 4–8 ESL Certificate.

Department Honors

The Department of Bicultural-Bilingual Studies awards Department Honors to certain outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the faculty of the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the discipline faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member. Students interested in this program should contact their professors for additional information.

- Bachelor of Arts Degree in Mexican American Studies (p. 72)
- Bilingual Education and ESL Teacher Certification Concentrations (p. 75)
- Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 Bilingual Generalist Certification Concentration) (p. 75)
- Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Bilingual Generalist Certification Concentration) (p. 77)
- Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 ESL Generalist Certification Concentration) (p. 79)
- Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 ESL Certification Concentration) (p. 80)
- English as a Second Language (ESL) Supplemental Teacher Certification (p. 82)

Bachelor of Arts Degree in Mexican American Studies

The Bachelor of Arts in Mexican American Studies is an interdisciplinary program integrating Mexican American studies with a specific liberal arts discipline. Majors are required to complete 39 semester credit hours from a prescribed program of study that must include 18 semester credit hours from one of eight concentrations: Anthropology; Communities, Families, and Children; History; Literary and Cultural Studies; Nonprofit Management; Political Science; Sociology; or Spanish.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the 120 hours must be upper-division. A maximum of 66 community college semester credit hours may be applied to this program.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Mexican American Studies must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need

to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

ANT 2033 is recommended to satisfy a core requirement in Life and Physical Sciences. ENG 2213, ENG 2383, or ENG 2423 is recommended to satisfy a core requirement in Language, Philosophy and Culture. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. ANT 2053, BBL 2003, or SOC 2013 is recommended to satisfy the core requirement in Social and Behavioral Sciences. ANT 2063 or MAS 2013 is recommended to satisfy the core requirement in Language, Philosophy and Culture.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Mexican American studies

1. Required courses:

BBL 2003	Language, Culture, and Society	3
or BBL 3133	Language Development in Bilinguals	
ENG 3513	Mexican American Literature	3
or ENG 4613	Topics in Mexican American Literature	
MAS 2013	Introduction to Chicano(a) Studies	3
MAS 2023	Latino Cultural Expressions	3
MAS 3033	Mexican Americans in the Southwest	3
MAS 4083	Research Seminar in Mexican American Studies	3

2. Select one course from the following:

BBL 3023	Mexican American Culture (required for anthropology concentration)	
MAS 3003	Musical Mestizaje	
MAS 3013	Chicana/o Queer Communities, Identities and Theories	
MAS 3023	Historical Legacies: Chicanas/os in Education	
MAS 3043	Social Psychological Considerations in Mexican American Communities	
MAS 3413	Mexican American Family	
MAS 4953	Special Studies in Mexican American Studies (Anthropology concentration students may substitute this course for BBL 3023 when topic is on Mexican Americans and cultural anthropology.)	
POL 3093	Mexican American Politics (required for political science concentration)	
SOC 3433	Mexican Immigration and U.S. Society (recommended for communities, families, and children concentration)	
ENG 3613	African American Literature (may substitute for MAS 4953, POL 3093 or SOC 3433 when courses not offered)	
SPN 3463	Latin American Literature to Modernism (if not taken for the concentration)	
SPN 3473	Latin American Literature since Modernism (if not taken for the concentration)	
WS 4623	Feminist Theories (may substitute for MAS 4953, POL 3093, or SOC 3433 when courses not offered)	

B. Areas of concentration

Select one of the following areas of concentration. Students are encouraged to select their area of concentration as early in their program as possible. 18

Concentration in Anthropology

1. Select three of the following:

ANT 2033	Introduction to Biological Anthropology
ANT 2043	Introduction to Archaeology
ANT 2053	Introduction to Cultural Anthropology
ANT 2063	Language, Thought, and Culture

2. Upper-division courses

AHC 3423	Arts of Ancient America
ANT 3363	Indians of Mesoamerica

Select one of the following:

ANT 4123	Archaeology of the American Southwest
SOC 3433	Mexican Immigration and U.S. Society ¹
WS 4623	Feminist Theories ¹

Concentration in Communities, Families, and Children

BBL 3053	Foundations of Bilingual Studies
BBL 3143	Children's Literature for Bilingual Learners
ESL 3023	Second Language Teaching and Learning in EC–6
MAS 3413	Mexican American Family
SOC 3503	Sociology of Education
SOC 3513	Children and Society
or ECE 3143	Child Growth and Development

Concentration in History

1. Required courses:

HIS 2003	Historical Methods
HIS 4973	Seminar in History

2. Select two of the following:

HIS 3083	History of the American West
HIS 3333	Latinas and Latinos in the United States from 1890 to Present
HIS 3463	History of Religion in the United States

3. Select two of the following:

HIS 2533	Introduction to Latin American Civilization
HIS 3033	The Spanish and Mexican Borderlands
HIS 3303	History of Mexico

Concentration in Literary and Cultural Studies

1. Methods. Note: This requirement must be completed before continuing with any other concentration requirements.

ENG 2213	Literary Criticism and Analysis ¹
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2. Select one of the following:

ENG 2383	Multiethnic Literatures of the United States ¹
ENG 2423	Literature of Texas and the Southwest ¹

3. Select one of the following:

ENG 4393	Feminist Theory of Literature
WS 3953	Special Topics in Women Writers

4. Select one of the following:

ENG 3513	Mexican American Literature (if not taken for the major requirement)
ENG 3713	Topics in Multiethnic Literatures of the United States ¹

ENG 4613	Topics in Mexican American Literature (if not taken for the major requirement)
5. Select one of the following:	
BBL 3023	Mexican American Culture (if not taken for the major requirement)
ENG 3613	African American Literature
HUM 3103	American Film ¹
6. Select one of the following:	
ENG 4953	Special Studies in English ¹
ENG 4973	Seminar for English Majors ¹
Concentration in Nonprofit Management	
1. Required courses	
NPO 3003	Fundraising in Nonprofit Agencies
NPO 3013	Introduction to Nonprofit Agencies
NPO 4933	Internship in Nonprofit Management
PAD 3043	Public and Nonprofit Financial Management
2. Select two courses from the following:	
COM 3893	Organizational Communication
PAD 3113	Managing Public and Nonprofit Organizations
PAD 3123	Strategic Planning in the Public and Nonprofit Sectors
PAD 4953	Special Topics in Nonprofit Organizations
Concentration in Political Science	
1. Required courses	
POL 2703	Scope and Methods in Political Science
POL 3093	Mexican American Politics
2. Select one of the following:	
POL 2503	Introduction to Political Theory
POL 2533	Introduction to Political Science
POL 2623	Law and Society
POL 2633	Comparative Politics
3. Three upper-division political science courses selected from three of the categories below:	
American Politics	
POL 3183	Women in Politics
POL 3303	Race, Ethnicity and Public Policy
POL 3413	The Politics of Urban Development
POL 3753	Latino/a Politics
Comparative or International Politics	
Comparative Politics	
POL 3453	The Politics of Mexico
POL 3463	Politics of the Third World
POL 3553	The Welfare State in Comparative Perspective
International Politics	
POL 3753	Latino/a Politics
POL 3763	Globalization
Political Theory	
POL 3153	Political Philosophy: Contemporary
POL 3163	Introduction to Feminist Theory
POL 3203	African American Political Thought
Public Administration or Public Law	
Public Administration	

POL 3413	The Politics of Urban Development
Public Law	
POL 3013	The American Legal Process
POL 3173	Justice and Social Policy
Concentration in Sociology	
1. Required courses	
SOC 1013	Introduction to Sociology
SOC 3043	Race and Ethnic Relations
SOC 3343	Classical Sociological Theory
or SOC 3353	Contemporary Sociological Theory
SOC 3373	Qualitative Research Methods
or SOC 3393	Quantitative Research Methods
2. Select two courses from the following:	
SOC 3013	Social Stratification
SOC 3043	Race and Ethnic Relations
SOC 3093	Religion and Society
SOC 3263	Latinas in U.S. Society
SOC 3283	Poverty
SOC 3433	Mexican Immigration and U.S. Society
Concentration in Spanish	
SPN 3013	Spanish Phonetics and Phonology
or SPN 3113	Linguistic Structures of Spanish
SPN 3043	Introduction to Literature
SPN 3063	Grammar and Composition
SPN 3463	Latin American Literature to Modernism
or SPN 3473	Latin American Literature since Modernism
SPN 3623	Latin American Culture and Civilization
Select one of the following:	
SPN 4123	The Spanish of the United States
BBL 4003	Spanish for Bilingual Instructional Delivery
ENG 4613	Topics in Mexican American Literature (when content includes Spanish literature and if not taken for the major requirement)

C. Electives

Select 39 semester credit hours of electives	39
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Total Credit Hours	78
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¹ Denotes course substitution accepted when taught by a Mexican American Studies affiliate or focus is on Chicano/ Latino content.

Mexican American Studies majors are encouraged to select a double major in the 39-semester-hour content of their concentration (i.e., Anthropology, Bicultural-Bilingual Studies, Business Administration, History, English, Political Science, Sociology, Spanish).

B.A. in Mexican American Studies – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
ANT 2033	Introduction to Biological Anthropology (core)	3

BBL 2003	Language, Culture, and Society (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Spring		
MAS 2023	Latino Cultural Expressions (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Second Year		
Fall		
ANT 2053 or 2063	Introduction to Cultural Anthropology	3
ECO 2003	Economic Principles and Issues (core)	3
MAS 2013	Introduction to Chicano(a) Studies (core)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Concentration courses (see Section B)		3
Spring		
MAS 3033	Mexican Americans in the Southwest	3
ENG 2213, 2383, or 2423	Literary Criticism and Analysis (core)	3
Concentration courses (see Section B)		3
Concentration courses (see Section B)		3
Elective in MAS (MAS 3043 or MAS 3413)		3
Third Year		
Fall		
ENG 3513 or 4613	Mexican American Literature	3
Concentration courses (see Section B)		6
Elective in MAS		3
Upper-division electives (see Section C)		3
Spring		
Concentration courses (see Section B)		6
Upper-division electives (see Section C)		9
Fourth Year		
Fall		
Electives (enough upper-division hours to meet required 39, see Section C)		12
Spring		
MAS 4083	Research Seminar in Mexican American Studies ¹	3
American History core		3
Electives (enough upper-division hours to meet required 39; see Section C)		12
Total Credit Hours:		120.0

¹ It is recommended that MAS and concentration courses be completed before taking MAS 4083, as this is the capstone course for the major.

Bilingual Education and ESL Teacher Certification Concentrations

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 Bilingual Generalist Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with early childhood–grade 6 bilingual generalist certification is 128, at least 39 of which must be at the upper-division level.

Spanish language proficiency requirement: Proficiency in oral and written Spanish at the advanced level is a requirement for bilingual generalist coursework and certification at UTSA. Students are required to complete the ALPS (Assessment for Language Proficiency in Spanish) prior to admission to the bilingual generalist certification program.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 is recommended to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033 or PHY 1013 should be used to satisfy the core requirement in Life and Physical Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. MAS 2023 is recommended to satisfy a core requirement in Creative Arts. HIS 1053 and HIS 2053 are recommended to satisfy the core requirement in United States History and Diversity. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

ECE 3313	Play, Creativity, and Learning	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
IDS 2403	Physical Science	4
& IDS 3201	and Inquiry in Physical Science	
or IDS 3234	Investigations in Physical Science	
IDS 2413	Earth Systems Science	4
& IDS 3211	and Inquiry in Earth Systems Science	

or IDS 3224	Earth Systems Science Investigations	
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
SPE 3603	Introduction to Special Education	3
Total Credit Hours		41

Certification Requirements

Texas Success Initiative (TSI) requirements must be satisfied before enrollment in Certification, Professional Education, and Student Teaching coursework.

A. Early Childhood–Grade 6 Bilingual Generalist courses

BBL 3013	Language Analysis and Bilingualism	3
BBL 3023	Mexican American Culture	3
or BBL 3033	Mexican Americans in the Southwest	
BBL 3053	Foundations of Bilingual Studies (prerequisite to BBL 4033, BBL 4063, BBL 4073, and BBL 4403)	3
BBL 3133	Language Development in Bilinguals	3
BBL 3143	Children’s Literature for Bilingual Learners	3
ESL 3023	Second Language Teaching and Learning in EC–6	3
ESL 3053	Literacy in a Second Language	3
RDG 3803	Writing Development and Processes	3

B. Professional Education courses

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

BBL 4033	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms ¹	3
BBL 4063	Bilingual Approaches to Content-Based Learning ¹	3
BBL 4073	Language Arts in a Bicultural-Bilingual Program ¹	3
BBL 4353	Approaches to Teaching Science EC–6	3
BBL 4403	Approaches to Teaching Mathematics EC–6 ¹	3
C&I 4616	Student Teaching: Early Childhood–Grade 6	6
RDG 3823	Reading Comprehension–EC–6	3
Total Credit Hours		48

¹ Concurrent enrollment.

B.A. in Interdisciplinary Studies, Early Childhood–Grade 6 Bilingual Generalist Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
HIS 1053	United States History: Civil War Era to Present (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

AST 1033 or PHY 1013	Exploration of the Solar System (core)	3
HIS 2053	Texas History (core)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3

Summer

IDS 2113	Society and Social Issues (core and major)	3
POL 1133	Texas Politics and Society (core)	3
Component Area Option core		3

Second Year

Fall

AAS 2013 or MAS 2013	Introduction to African American Studies (core)	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAS 2023	Latino Cultural Expressions (core)	3
MAT 1153	Essential Elements in Mathematics I	3

Spring

BBL 3053	Foundations of Bilingual Studies	3
IDS 2403	Physical Science	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3201	Inquiry in Physical Science	1
MAT 1163	Essential Elements in Mathematics II	3

Summer

IDS 2413	Earth Systems Science	3
IDS 3211	Inquiry in Earth Systems Science	1
RDG 3803	Writing Development and Processes	3
SPE 3603	Introduction to Special Education	3

Third Year

Fall

Admission to the Teacher Certification Program		
BBL 3013	Language Analysis and Bilingualism	3
BBL 3133	Language Development in Bilinguals	3
ECE 3313	Play, Creativity, and Learning	3
ESL 3023	Second Language Teaching and Learning in EC–6	3
IDS 3003	STEM in Social Contexts	3

Spring

BBL 3023 or 3033	Mexican American Culture	3
BBL 3143	Children’s Literature for Bilingual Learners	3
BBL 4353	Approaches to Teaching Science EC–6	3
ESL 3053	Literacy in a Second Language	3

RDG 3823	Reading Comprehension–EC–6	3
Summer		
IDS 3713	Interdisciplinary Inquiry	3
Fourth Year		
Fall		
BBL 4033	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms ¹	3
BBL 4063	Bilingual Approaches to Content-Based Learning ¹	3
BBL 4073	Language Arts in a Bicultural-Bilingual Program ¹	3
BBL 4403	Approaches to Teaching Mathematics EC–6 ¹	3
Spring		
C&I 4616	Student Teaching: Early Childhood–Grade 6	6
Total Credit Hours:		128.0

¹ Concurrent enrollment.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Bilingual Generalist Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with grades 4–8 bilingual generalist certification is 131, at least 39 of which must be at the upper-division level.

Spanish language proficiency requirement: Proficiency in oral and written Spanish at the advanced level is a requirement for bilingual generalist coursework and certification at UTSA. Students are required to complete the ALPS (Assessment for Language Proficiency in Spanish) prior to admission to the bilingual generalist certification program.

Core Curriculum Requirements

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy a core requirement in Life and Physical Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirement in Language, Philosophy and Culture. MAS 2023 is recommended to satisfy a core requirement in Creative Arts. HIS 1053 and HIS 2053 should be used to satisfy the core requirement in United States History and Diversity. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

1. Required Courses:

BIO 1233	Contemporary Biology I	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
GRG 1023	World Regional Geography	3
HIS 1053	United States History: Civil War Era to Present	3
HIS 2053	Texas History	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
IDS 2403 & IDS 3201 or IDS 3234	Physical Science and Inquiry in Physical Science Investigations in Physical Science	4
IDS 2413 & IDS 3211 or IDS 3224	Earth Systems Science and Inquiry in Earth Systems Science Earth Systems Science Investigations	4
MAT 1023	College Algebra with Applications	3
MAT 1093	Precalculus	3
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
MAT 1214	Calculus I	4
RDG 3523	Reading for Teachers–Grades 4–8	3
RDG 3633	Literature and Other Texts Across the Content Areas–Grades 4–8	3
SPE 3603	Introduction to Special Education	3
2. Level One or Level Two Science courses in a different discipline from science courses taken for Core Curriculum requirement.		3
3. Select one of the following: ¹		3
BBL 4003	Spanish for Bilingual Instructional Delivery	
SPN 3063	Grammar and Composition	
SPN 4003	Advanced Language Skills	

Total Credit Hours **75**

¹ Students must complete one of the three listed courses with a grade of “C–” or higher. Grades of “CR” received from a Challenge Examination of a UTSA course or College Level Examination Program (CLEP) will not be accepted.

Certification Requirements

Texas Success Initiative (TSI) requirements must be satisfied before enrollment in Certification, Professional Education, and Student Teaching coursework.

A. Required courses

BBL 3053	Foundations of Bilingual Studies	3
BBL 3133	Language Development in Bilinguals	3
ESL 3053	Literacy in a Second Language	3
ESL 3063	Second Language Acquisition in Early Adolescence	3

B. Professional Education courses

The following courses require an advisor code and are restricted to students who have applied and been accepted into the Teacher Certification Program.

BBL 4033	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms ¹	3
BBL 4063	Bilingual Approaches to Content-Based Learning ¹	3
BBL 4073	Language Arts in a Bicultural-Bilingual Program ¹	3
C&I 4433 or C&I 4443	Approaches to Teaching Science—Grades 4–8 Approaches to Teaching Mathematics—Grades 4–8	3
C&I 4603	Mathematics and Science Approaches and Classroom Management Strategies—Grades 4–8	3
C&I 4626	Student Teaching: Grades 4–8	6
Total Credit Hours		33

¹ Concurrent enrollment.

B.A. in Interdisciplinary Studies, Grades 4–8 Bilingual Generalist Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core and major)	3
HIS 1053	United States History: Civil War Era to Present (core and major)	3
MAT 1023	College Algebra with Applications (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
HIS 2053	Texas History (core and major)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
MAS 2023	Latino Cultural Expressions (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3

Summer

IDS 2403	Physical Science	3
POL 1013	Introduction to American Politics (core)	3

Second Year**Fall**

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2413	Earth Systems Science	3

AAS 2013 or MAS 2013	Introduction to African American Studies (core)	3
MAT 1093	Precalculus	3
MAT 1153	Essential Elements in Mathematics I	3

Spring

IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
MAT 1163	Essential Elements in Mathematics II	3
MAT 1214	Calculus I	4
POL 1133 or 1213	Texas Politics and Society (core)	3

Summer

GRG 1023	World Regional Geography	3
SPE 3603	Introduction to Special Education	3
Component Area Option core		3
Life & Physical Sciences core		3

Third Year**Fall**

Admission to the Teacher Certification Program

BBL 3053	Foundations of Bilingual Studies	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
IDS 3003	STEM in Social Contexts	3
IDS 3201 or 3211	Inquiry in Physical Science	1
BBL 4003, SPN 3063, or SPN 4003	Spanish for Bilingual Instructional Delivery	3

Spring

BBL 3133	Language Development in Bilinguals	3
ESL 3053	Literacy in a Second Language	3
IDS 3713	Interdisciplinary Inquiry	3
RDG 3523	Reading for Teachers—Grades 4–8	3
RDG 3633	Literature and Other Texts Across the Content Areas—Grades 4–8	3

Fourth Year**Fall**

BBL 4033	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms ¹	3
BBL 4063	Bilingual Approaches to Content-Based Learning ¹	3
BBL 4073	Language Arts in a Bicultural-Bilingual Program ¹	3
C&I 4433 or 4443	Approaches to Teaching Science—Grades 4–8	3
C&I 4603	Mathematics and Science Approaches and Classroom Management Strategies—Grades 4–8	3

Spring

C&I 4626	Student Teaching: Grades 4–8	6
Total Credit Hours:		131.0

¹ Concurrent enrollment.

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 ESL Generalist Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with early childhood–grade 6 ESL generalist certification is 128, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 is recommended to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033 or PHY 1013 should be used to satisfy the core requirement in Life and Physical Sciences. BBL 2003 is recommended in to satisfy the Component Area Option. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. HIS 1053 and HIS 2053 should be used to satisfy the core requirement in America History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. A foreign language course should be used to satisfy the core requirement in Language, Philosophy & Culture if it is needed to meet the language requirement, otherwise AAS 2013 or MAS 2013 are recommended.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

IDS 2403 & IDS 3201 or IDS 3234	Physical Science and Inquiry in Physical Science Investigations in Physical Science	4
IDS 2413 & IDS 3211 or IDS 3224	Earth Systems Science and Inquiry in Earth Systems Science Investigations	4
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3

C. Language Requirement

Documented oral communication skills in a language other than English at the intermediate level (2000 level). Courses include, but are not limited to: ASL, CHN, FRN, GER, ITL, JPN, RUS, SPN at 2013 level, and SPN 2003 Spanish for Elementary Education. Grades of “CR” received from a Challenge Examination of a UTSA course in which student demonstrates oral communication skills in a language other than English will be accepted.

Total Credit Hours	29-32
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Certification Requirements

Programs are subject to change without notice due to changes in the state’s certification and/or program approval requirements.

A. ESL Special Delivery System Core

ENG 3333	Introduction to the Structure of English	3
ESL 3003	Language and Schooling	3
ESL 3023	Second Language Teaching and Learning in EC–6	3
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3
ESL 4013	Principles of First and Second Language Acquisition	3

B. Other Certification Courses

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
RDG 3513	Children’s Literature–EC–6	3
RDG 3803	Writing Development and Processes	3
SPE 3603	Introduction to Special Education	3

The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.

RDG 3823	Reading Comprehension–EC–6	3
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Total Credit Hours	36
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Professional Education Requirements

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I 4303	Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6	3
C&I 4353	Approaches to Teaching Science EC–6	3
C&I 4403	Approaches to Teaching Mathematics EC–6	3
C&I 4616	Student Teaching: Early Childhood–Grade 6	6
ECE 4203	Assessment and Evaluation in EC–6	3
ESL 4003	Approaches to Second Language Teaching	3
RDG 4833	Organizing Reading Programs for Differentiated Instruction–EC–6	3

Total Credit Hours	24
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B.A. in Interdisciplinary Studies, Early Childhood–Grade 6 ESL Generalist Certification Concentration – Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
HIS 1053	United States History: Civil War Era to Present (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
AST 1033 or PHY 1013	Exploration of the Solar System (core)	3
HIS 2053	Texas History (core)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Summer		
BBL 2003	Language, Culture, and Society (core)	3
IDS 2113	Society and Social Issues (core and major)	3
POL 1133	Texas Politics and Society	3
Intermediate-level foreign language or AAS 2013 or MAS 2013 (core) ¹		
Second Year		
Fall		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3003	Language and Schooling	3
MAS 2023	Latino Cultural Expressions (core)	3
ENG 2013, 2383, or 2423	Introduction to Literature	3
MAT 1153	Essential Elements in Mathematics I	3
Spring		
ESL 3023	Second Language Teaching and Learning in EC–6	3
ESL 3033	Foundations of English as a Second Language	3
ESL 4013	Principles of First and Second Language Acquisition	3
IDS 2403	Physical Science	3
IDS 3201	Inquiry in Physical Science	1
MAT 1163	Essential Elements in Mathematics II	3
Summer		
IDS 2413	Earth Systems Science	3

IDS 3211	Inquiry in Earth Systems Science	1
ESL 3053	Literacy in a Second Language	3
RDG 3803	Writing Development and Processes	3

Third Year

Fall		
Admission to the Teacher Certification Program		
ENG 3333	Introduction to the Structure of English	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
SPE 3603	Introduction to Special Education	3
Spring		
C&I 4353	Approaches to Teaching Science EC–6	3
C&I 4403	Approaches to Teaching Mathematics EC–6	3
ECE 4203	Assessment and Evaluation in EC–6	3
RDG 3823	Reading Comprehension–EC–6	3
Summer		
IDS 3713	Interdisciplinary Inquiry	3
RDG 3513	Children’s Literature–EC–6	3
Fourth Year		
Fall		
C&I 4303	Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6	3
ESL 4003	Approaches to Second Language Teaching	3
IDS 3123	Culture, Literature, and Fine Arts	3
RDG 4833	Organizing Reading Programs for Differentiated Instruction–EC–6	3
Spring		
C&I 4616	Student Teaching: Early Childhood–Grade 6	6

Total Credit Hours: 128.0

¹ Grades of “CR” received from a Challenge Examination of a UTSA course in which student demonstrates oral communication skills in a language other than English (at the 2000 level) will be accepted.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 ESL Certification Concentration)

Students pursuing Grades 4–8 ESL certification will complete a program of study that focuses on the content areas of reading, language arts and social studies. The minimum number of semester credit hours required for the IDS degree with Grades 4–8 ESL certification is 129–132, at least 39 of which must be at the upper-division level.

Core Curriculum requirements

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies (Grades 4–8 ESL certification concentration) must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below

MAT 1023 is recommended to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033 or PHY 1013 should be used to satisfy the core requirement in Life and Physical Sciences. BBL 2003 is recommended to satisfy the Component Area Option. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. HIS 1053 and HIS 2053 should be used to satisfy the core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. A foreign language course should be used to satisfy the core requirement in Language, Philosophy and Culture if it is needed to meet the language requirement, otherwise AAS 2013 or MAS 2013 are recommended.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
MAT 1023	College Algebra with Applications	3
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
Select two of the following:		6

BBL 2243	Globalizing the Local: Bilingual Families, Communities, and Schools	
BBL 3033	Mexican Americans in the Southwest	
MAS 3413	Mexican American Family	
SOC 3043	Race and Ethnic Relations	
SOC 3283	Poverty	
SOC 3423	Mass Media in Society	

C. Language Requirement

Documented oral communication skills in a language other than English at the intermediate level (2000 level). Courses include, but are not limited to: ASL, CHN, FRN, GER, ITL, JPN, RUS, SPN at 2013 level and SPN 2003 Spanish for Elementary Education. Grades of "CR" received from a Challenge Examination of a UTSA course in which student demonstrates oral communication skills in a language other than English will be accepted.

Total Credit Hours 36-39

Certification Requirements

Programs are subject to change without notice due to changes in the state's certification and/or program approval requirements.

A. ESL Special Delivery System Core

ENG 3333	Introduction to the Structure of English	3
ESL 3003	Language and Schooling	3
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
ESL 4013	Principles of First and Second Language Acquisition	3

B. Other Certification Courses

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
RDG 3523	Reading for Teachers—Grades 4–8	3
RDG 3803	Writing Development and Processes	3
SPE 3603	Introduction to Special Education	3
RDG 3633	Literature and Other Texts Across the Content Areas—Grades 4–8 (this course requires admission to the teacher certification program)	3
or RDG 3533	Reading and Writing Across the Disciplines—Grades 4–8	

C. Professional Education Courses

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I 4543	Approaches to Teaching Social Studies—Grades 4–8	3
C&I 4626	Student Teaching: Grades 4–8	6
EDP 4203	Assessment and Evaluation	3
ESL 4003	Approaches to Second Language Teaching	3

Total Credit Hours 57

B.A. in Interdisciplinary Studies, Grades 4–8 ESL Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History core	3
	Life & Physical Sciences core	3

Spring

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3

WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Summer		
BBL 2003	Language, Culture, and Society (core)	3
IDS 2113	Society and Social Issues (core)	3
IDS 2403	Physical Science	3
Second Year		
Fall		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3003	Language and Schooling	3
IDS 2413	Earth Systems Science	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 1153	Essential Elements in Mathematics I	3
Spring		
ENG 2013 or 2383	Introduction to Literature	3
ESL 3033	Foundations of English as a Second Language	3
IDS 2083	Technology for Learning and Teaching	3
IDS 3003	STEM in Social Contexts	3
MAT 1163	Essential Elements in Mathematics II	3
Summer		
ESL 3053	Literacy in a Second Language	3
MAS 2023	Latino Cultural Expressions (core)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
SPE 3603	Introduction to Special Education	3
Third Year		
Fall		
Admission to the Teacher Certification Program		
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
ENG 3333	Introduction to the Structure of English	3
IDS 3713	Interdisciplinary Inquiry	3
RDG 3803	Writing Development and Processes	3
Foreign language ¹		0-3
Spring		
BBL 3033, MAS 3413, SOC 3043, SOC 3283, or SOC 3423	Mexican Americans in the Southwest	3
BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
ESL 4013	Principles of First and Second Language Acquisition	3

RDG 3523	Reading for Teachers—Grades 4–8	3
Fourth Year		
Fall		
C&I 4543	Approaches to Teaching Social Studies—Grades 4–8	3
EDP 4203	Assessment and Evaluation	3
ESL 4003	Approaches to Second Language Teaching	3
IDS 3123	Culture, Literature, and Fine Arts	3
RDG 3533 or 3633	Reading and Writing Across the Disciplines—Grades 4–8	3
Spring		
C&I 4626	Student Teaching: Grades 4–8	6
Total Credit Hours:		129.0-132.0

¹ Grades of “CR” received from a Challenge Examination of a UTSA course in which student demonstrates oral communication skills in a language other than English (at the 2000 level) will be accepted.

English as a Second Language (ESL) Supplemental Teacher Certification

ESL Supplemental Teacher Certification may be completed by any teacher certification student. Courses in this sequence will provide the necessary coursework addressing the TExES ESL Supplemental examination. Eighteen (18) semester credit hours are required for the ESL Supplemental Teacher Certification, however, 6 of these hours are already included in other teacher certification programs. Students pursuing EC–6 and grades 4–8 teacher certification may complete the ESL Supplemental Teacher Certification with only 12 additional hours of coursework.

BBL 3023	Mexican American Culture	3
or		
BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society (required for EC–6 and grades 4–8 teacher certification programs)	
ESL 3003	Language and Schooling	3
ESL 3023	Second Language Teaching and Learning in EC–6 (required for EC–6 teacher certification programs)	3
or		
ESL 3063	Second Language Acquisition in Early Adolescence (required for grades 4–8 teacher certification programs)	
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3
ESL 4003	Approaches to Second Language Teaching	3

- Minor in Bicultural Studies (p. 82)
- Minor in English as a Second Language (p. 83)

Minor in Bicultural Studies

All students pursuing a Minor in Bicultural Studies must complete 18 semester credit hours.

A. Bicultural Studies

Select two of the following: 6

BBL 2003 Language, Culture, and Society

BBL 2023 Latino Cultural Expressions

MAS 2013 Introduction to Chicano(a) Studies

B. Language

Select two of the following: 6

BBL 3013 Language Analysis and Bilingualism

BBL 3133 Language Development in Bilinguals

ESL 3003 Language and Schooling

MAS 3043 Social Psychological Considerations in Mexican American Communities

C. Culture and Society

Select two of the following: 6

BBL 2033 Multiculturalism in the Southwest

BBL 3023 Mexican American Culture

BBL 3033 Mexican Americans in the Southwest

BBL 4953 Special Studies in Bilingual and Bicultural Studies

Total Credit Hours 18

To declare a Minor in Bicultural Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in English as a Second Language

All students pursuing a Minor in English as a Second Language must complete 18 semester credit hours.

A. Courses in English as a second language

ESL 3003 Language and Schooling 3

ESL 3033 Foundations of English as a Second Language 3

ESL 3053 Literacy in a Second Language 3

Select one of the following: 3

BBL 3013 Language Analysis and Bilingualism

BBL 3133 Language Development in Bilinguals

ESL 3023 Second Language Teaching and Learning in EC-6

ESL 3063 Second Language Acquisition in Early Adolescence

ESL 4013 Principles of First and Second Language Acquisition

B. Culture and society

Select one of the following: 3

BBL 2033 Multiculturalism in the Southwest

BBL 3023 Mexican American Culture

BBL 3033 Mexican Americans in the Southwest

C. Language minority education

Select one of the following: 3

BBL 3053 Foundations of Bilingual Studies

BBL 4033 Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms

BBL 4953 Special Studies in Bilingual and Bicultural Studies

Total Credit Hours 18

To declare a Minor in English as a Second Language, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Counseling

The Department of Counseling provides support work for undergraduate degrees and offers a Master of Arts degree in Counseling and a Doctor of Philosophy degree in Counselor Education and Supervision. The nationally CACREP (Council for Accreditation of Counseling and Related Educational Programs) accredited master's and doctoral degrees offer the opportunity for advanced study and professional development in the field of counseling. (See the *UTSA Graduate Catalog* for further information.)

Department of Educational Leadership and Policy Studies

The Department of Educational Leadership and Policy Studies prepares educators to become transformational leaders who can work effectively in diverse, ambiguous, and challenging contexts. The goals of this transformational leadership include equity, excellence, social justice, democracy, risk-taking, and responsiveness to community needs. Faculty in the Department of Educational Leadership and Policy Studies are strongly committed to developing collaborative and responsive relationships with area schools and communities. The Department offers the Master of Education degree in Educational Leadership and Policy Studies and the Doctor of Education degree in Educational Leadership. (See the *UTSA Graduate Catalog* for further information.)

Department of Educational Psychology**Mission Statement**

The mission of the Department of Educational Psychology is to promote the development and application of scientific knowledge. To do so, our faculty members are committed to: Producing high-quality, innovative research and scholarship; Providing effective and culturally inclusive instructional technologies to prepare practitioners and researchers to use the tools, resources, and strategies necessary to improve the educational experience of all learners; Preparing culturally competent scientist-practitioners and researchers to effectively contribute to the applied psychological development and well-being of children and adolescents; Providing responsive educational and psychological services to the local community, schools, and beyond; and, Engaging in participatory and leadership roles in local, national, and international institutions and organizations.

The Department of Educational Psychology faculty provide valuable support to other departments and program areas within the College of Education and Human Development and throughout the University by teaching courses based on foundational educational psychology concepts in areas such as learning, motivation, development, assessment, and research methods. At this time, the Department of Educational Psychology offers one graduate degree: the Master of Arts in School Psychology. The Department also offers two graduate certificates:

Certificate in Applied Behavior Analysis and Certificate in Digital Learning Design. (See the *UTSA Graduate Catalog* for further information.)

Department of Interdisciplinary Learning and Teaching

Mission Statement

The mission of the Department of Interdisciplinary Learning and Teaching is to:

- Advance the intellectual and professional development of students and faculty through research, critical reflection and dialogue, civic responsibility, and transformative leadership;
- Promote equality and social justice by advocating for educational change and reform; and
- Nurture the personal and professional integrity of all learners.

Vision Statement

To be a model interdisciplinary education program that prepares professionals to work with diverse learners in a global setting.

Core Values

The Department of Interdisciplinary Learning and Teaching will create a context of equitable access that nurtures interdisciplinary learners who embody the following core values:

- **Intellectual:** Demonstrates content, cultural, and technological knowledge, as well as pedagogical-content knowledge;
- **Transformative:** Recognizes and engages in research-based, developmentally, culturally and linguistically responsive practices, that are life-changing for all learners;
- **Inquisitive:** Critically analyzes, produces, and disseminates research;
- **Critically conscious:** Understands the interrelationship among socio-cultural, historical, and political contexts of U.S. education and engages in empowering practices;
- **Ethical:** Exhibits ethical behavior in all their interactions with all populations; and
- **Professional:** Articulates a philosophy and demonstrates a strong professional identity that respects a diverse global society.

Department Honors

The Department of Interdisciplinary Learning and Teaching awards Department Honors to certain outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the faculty of the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the discipline faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another

departmental faculty member. Students interested in this program should contact their professors for additional information.

Department Information

The Department of Interdisciplinary Learning and Teaching offers the following degrees and certifications:

1. Bachelor of Applied Arts and Sciences Degree in Infancy and Childhood Studies
2. Bachelor of Arts Degree in Interdisciplinary Studies
 - a. **Degree-Only Concentration**
The Bachelor of Arts (B.A.) in Interdisciplinary Studies (IDS) degree-only concentration may be used as preparation for careers in government service or work with youth in a nonteaching capacity, or as an opportunity to prepare for graduate or professional study in areas such as business, counseling, or social work. The minimum number of semester credit hours required for the B.A. in IDS degree-only concentration, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. Students selecting this concentration also choose an academic specialization. See the section entitled "Bachelor of Arts Degree in Interdisciplinary Studies (degree-only concentration)" for a listing of the requirements for this degree.
 - b. **Degree with Certification Concentrations**
Students who choose the IDS major can also seek teacher certification. The IDS program is designed to give successful students the opportunity to become teachers who understand their own thinking and learning processes and can successfully foster children's conceptual, intellectual, and affective growth. Within the Department of Interdisciplinary Learning and Teaching, IDS majors who select teacher certification can choose from five concentrations: early childhood–grade 6 (EC–6) generalist certification, grades 4–8 generalist, grades 4–8 language arts/reading/social studies certification, grades 4–8 mathematics/science certification, or EC–12 special education concentration. For additional information regarding requirements for these certifications, students should consult the section of this catalog entitled "IDS Degree Program with Teacher Certification Concentrations." They should also consult with their academic advisor for information regarding certification requirements and for information on admission to the Teacher Certification Program.
IDS majors seeking bilingual or ESL certification for EC–6 and 4–8 should refer to the section of this catalog entitled Department of Bicultural-Bilingual Studies.
Please note that certification programs and requirements are subject to change depending on changes mandated by the state.
3. Secondary Certification
The Department of Interdisciplinary Learning and Teaching offers coursework required for students seeking secondary certification (grades 8–12). Students seeking certification to teach at the secondary level must obtain a bachelor's degree in the academic area in which they plan to teach. They should consult with an advisor in the college in which their degree is contained. They should also consult with their academic advisor for information regarding secondary certification requirements and for information on admission to the Teacher Certification Program. For additional information regarding secondary certification requirements, students should

consult the section of this catalog entitled “Secondary Certification Programs.”

Teacher certification requirements are subject to change; students should consult with an advisor for the most current certification requirements.

- Bachelor of Applied Arts and Sciences Degree in Infancy and Childhood Studies (p. 85)
- Bachelor of Arts Degree in Interdisciplinary Studies (degree-only concentration) (p. 86)
- IDS Degree Program with Teacher Certification Concentrations (p. 87)
- Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 Generalist Certification Concentration) (p. 87)
- Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Generalist Certification Concentration) (p. 88)
- Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Language Arts/Reading/Social Studies Certification Concentration) (p. 90)
- Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Mathematics/Science Certification Concentration) (p. 92)
- Bachelor of Arts Degree in Interdisciplinary Studies (EC–12 Special Education Certification Concentration) (p. 93)

Bachelor of Applied Arts and Sciences Degree in Infancy and Childhood Studies

The Bachelor of Applied Arts and Sciences (B.A.A.S.) degree in Infancy and Childhood Studies emphasizes the study of language and reading in early childhood development. The minimum number of semester credit hours for the B.A.A.S. degree in Infancy and Childhood Studies is 120, including Core Curriculum requirement hours. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Applied Arts and Sciences degree in Infancy and Childhood Studies must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Organized technical program

Select 36 semester credit hours in an organized technical program completed at a community college 36

B. Core Curriculum courses

Core Curriculum courses 42

C. Required upper-division coursework for the major

BBL 3143	Children’s Literature for Bilingual Learners	3
or RDG 3513	Children’s Literature–EC–6	
ECE 3133	Programs and Policies in Early Childhood Education	3

ECE 3143	Child Growth and Development	3
ECE 3313	Play, Creativity, and Learning	3
ECE 3603	Language and Literacy Acquisition	3
ECE 4103	Guidance of Young Children in Groups	3
ECE 4123	Family and Community Resources in Early Childhood	3
ECE 4153	Culturally Appropriate Assessment for Infants and Young Children	3
HTH 3013	Survey of Human Nutrition	3
KIN 3123	Early Childhood Development Through Movement	3
SPE 3603	Introduction to Special Education	3

D. Multicultural Education

Select two of the following:		6
AAS 3013	African American Cultural Experiences	
BBL 3023	Mexican American Culture	
SOC 3413	Sociology of the Mexican American Community	
SOC 3503	Sociology of Education	

Electives

Select 3 semester credit hours of elective coursework 3

Total Credit Hours 120

B.A.A.S. in Infancy and Childhood Studies – Recommended Four-Year Academic Plan

Coursework to be Completed at a Community College (Associate of Applied Science degree)

Organized technical program completed at a community college	36
Core Curriculum courses	42
Total Credit Hours	78

Third Year

Fall		Credit Hours
ECE 3143	Child Growth and Development ¹	3
ECE 3313	Play, Creativity, and Learning ¹	3
ECE 3603	Language and Literacy Acquisition ¹	3
HTH 3013	Survey of Human Nutrition	3
Spring		
BBL 3143 or RDG 3513	Children’s Literature for Bilingual Learners	3
ECE 3133	Programs and Policies in Early Childhood Education	3
SPE 3603	Introduction to Special Education	3
	Elective (KIN 2303 recommended)	3

Fourth Year

Fall		
ECE 4103	Guidance of Young Children in Groups	3
ECE 4123	Family and Community Resources in Early Childhood	3
ECE 4153	Culturally Appropriate Assessment for Infants and Young Children	3
KIN 3123	Early Childhood Development Through Movement	3

Spring

Select two of the following:	6
AAS 3013 African American Cultural Experiences	3
BBL 3023 Mexican American Culture	3
SOC 3413 Sociology of the Mexican American Community	3
SOC 3503 Sociology of Education	3
Total Credit Hours:	42.0

¹ These courses should be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (degree-only concentration)

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies without teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 should be used to satisfy the core requirement in Mathematics. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

IDS Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Required Courses

IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
IDS 3201	Inquiry in Physical Science	1
IDS 3211	Inquiry in Earth Systems Science	1
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3

C. Area of Specialization

One area of specialization must be selected by the student seeking the IDS major only concentration. This involves a sequence of courses, with a minimum of 18–24 semester credit hours, including 6 hours at the upper-division level, in one specific area or discipline. The area of specialization should not include coursework in the IDS core or IDS required courses. Assistance in selection is available from the Interdisciplinary Education Advising and Certification Center. Students are encouraged to select their area of specialization as early in their program as possible.

D. Electives

Upper-division courses to complete a minimum total of 120 semester credit hours. Advisors in the Interdisciplinary Education Advising and Certification Center will assist interdisciplinary studies degree-only majors to use their electives to develop a coherent program of study using existing UTSA course offerings.

B.A. in Interdisciplinary Studies, Degree-only Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
POL 1013	Introduction to American Politics (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History core	3

Spring

IDS 2113	Society and Social Issues (core and major)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	American History core	3
	Life & Physical Sciences core	3

Second Year

Fall

IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 1153	Essential Elements in Mathematics I	3
	Creative Arts core	3
	Language, Philosophy & Culture core	3
	Life & Physical Sciences core	3

Spring

IDS 2403 or 3234	Physical Science	3
IDS 3201 or 3224	Inquiry in Physical Science	1
MAT 1163	Essential Elements in Mathematics II	3
	Area of Specialization course	3
	Component Area Option core	3
	Upper-division elective	3

Third Year

Fall

IDS 2413 or 3224	Earth Systems Science	3
IDS 3211 or 3224	Inquiry in Earth Systems Science	1
IDS 3123	Culture, Literature, and Fine Arts	3
	Area of Specialization course	3
	Area of Specialization course	3
	Upper-division elective	3

Spring

IDS 3003	STEM in Social Contexts	3
	Area of Specialization course	3
	Upper-division elective	3

Upper-division elective	3
Upper-division elective	3
Fourth Year	
Fall	
IDS 3713 Interdisciplinary Inquiry	3
Upper-division Area of Specialization course	3
Upper-division elective	3
Upper-division elective	3
Upper-division elective	3
Spring	
Upper-division Area of Specialization course	3
Upper-division elective	3
Upper-division elective	3
Upper-division elective	3
Upper-division elective (to meet 120 hour minimum)	1
Total Credit Hours:	120.0

IDS Degree Program with Teacher Certification Concentrations

Programs are subject to change without notice due to changes in the state’s certification and/or program approval requirements. Teacher certification programs address standards of the State Board for Educator Certification. Standards can be found at <http://www.tea.state.tx.us>.

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 Generalist Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with Early Childhood–Grade 6 generalist certification is 125, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033or PHY 1013 should be used to satisfy the core requirement in Life and Natural Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. MAS 2023 is recommended to satisfy the core requirement in Creative Arts.

Core Curriculum Component Area Requirements (p. 7)

IDS Degree Requirements

A. IDS Core courses

IDS 2113 Society and Social Issues	3
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IDS 3003 STEM in Social Contexts	3
IDS 3013 Diversity, Equity, and the Social Sciences	3
IDS 3123 Culture, Literature, and Fine Arts	3
IDS 3713 Interdisciplinary Inquiry	3

B. IDS Support courses

IDS 2403 Physical Science & IDS 3201 and Inquiry in Physical Science or IDS 3234 Investigations in Physical Science	4
IDS 2413 Earth Systems Science & IDS 3211 and Inquiry in Earth Systems Science or IDS 3224 Earth Systems Science Investigations	4
MAT 1153 Essential Elements in Mathematics I	3
MAT 1163 Essential Elements in Mathematics II	3

Total Credit Hours	29
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Certification Requirements

BBL 3403 Cultural and Linguistic Diversity in a Pluralistic Society	3
ECE 3143 Child Growth and Development	3
ECE 3313 Play, Creativity, and Learning	3
ECE 3603 Language and Literacy Acquisition	3
EDU 2103 Social Foundations for Education in a Diverse U.S. Society	3
ESL 3023 Second Language Teaching and Learning in EC–6	3
IDS 2013 Introduction to Learning and Teaching in a Culturally Diverse Society	3
RDG 3513 Children’s Literature–EC–6	3
RDG 3803 Writing Development and Processes	3
SPE 3603 Introduction to Special Education	3

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

RDG 3823 Reading Comprehension–EC–6	3
RDG 4833 Organizing Reading Programs for Differentiated Instruction–EC–6	3

Total Credit Hours	36
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Professional Education Requirements

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I 4303 Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6	3
C&I 4353 Approaches to Teaching Science EC–6	3
C&I 4403 Approaches to Teaching Mathematics EC–6	3
C&I 4616 Student Teaching: Early Childhood–Grade 6	6
ECE 4143 Principles and Practices of Differentiated Education EC–6	3
ECE 4203 Assessment and Evaluation in EC–6	3

Total Credit Hours	21
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B.A. in Interdisciplinary Studies, Early Childhood–Grade 6 Generalist Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall

		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History core	3

Spring

AST 1033 or PHY 1013	Exploration of the Solar System (core)	3
HIS 2053	Texas History (core)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3

Summer

POL 1133	Texas Politics and Society (core)	3
IDS 2113	Society and Social Issues (core and major)	3
	Component Area Option core	3

Second Year

Fall

AAS 2013 or MAS 2013	Introduction to African American Studies	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 3123	Culture, Literature, and Fine Arts	3
MAT 1153	Essential Elements in Mathematics I	3
	Creative Arts core (MAS 2023 recommended)	3

Spring

IDS 2403	Physical Science	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3201	Inquiry in Physical Science	1
MAT 1163	Essential Elements in Mathematics II	3
RDG 3803	Writing Development and Processes	3

Summer

IDS 2413	Earth Systems Science	3
IDS 3211	Inquiry in Earth Systems Science	1
SPE 3603	Introduction to Special Education	3

Third Year

Fall

	Admission to the Teacher Certification Program	
IDS 3003	STEM in Social Contexts	3

ECE 3143	Child Growth and Development ¹	3
ECE 3313	Play, Creativity, and Learning ¹	3
ECE 3603	Language and Literacy Acquisition ¹	3
RDG 3513	Children's Literature–EC–6	3

Spring

(must be taken Fall or Spring semesters)

C&I 4353	Approaches to Teaching Science EC–6 ²	3
C&I 4403	Approaches to Teaching Mathematics EC–6 ²	3
ECE 4203	Assessment and Evaluation in EC–6 ²	3
RDG 3823	Reading Comprehension–EC–6 ²	3

Summer

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
IDS 3713	Interdisciplinary Inquiry	3

Fourth Year

Fall

(must be taken Fall or Spring semesters)

C&I 4303	Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6 ³	3
ECE 4143	Principles and Practices of Differentiated Education EC–6 ³	3
ESL 3023	Second Language Teaching and Learning in EC–6	3
RDG 4833	Organizing Reading Programs for Differentiated Instruction–EC–6 ³	3

Spring

(must be taken Fall or Spring semesters)

C&I 4616	Student Teaching: Early Childhood–Grade 6	6
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Total Credit Hours:	125.0
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¹ Must be taken concurrently.

² Must be taken concurrently.

³ Must be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Generalist Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with grades 4–8 generalist certification is 120, at least 39 of which must be at the upper-division level.

Core Curriculum requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements

and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and BIO 1243 should be used to satisfy the core requirement in Life and Natural Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. GRG 1013 is recommended to satisfy the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

IDS Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
GRG 1013	Fundamentals of Geography	3
IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3

Total Credit Hours 33

Certification Requirements

EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
RDG 3523	Reading for Teachers—Grades 4–8	3
RDG 3633	Literature and Other Texts Across the Content Areas—Grades 4–8	3
RDG 3803	Writing Development and Processes	3
SPE 3603	Introduction to Special Education	3

The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.

RDG 3533	Reading and Writing Across the Disciplines—Grades 4–8	3
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Total Credit Hours 30

Professional Education Requirements

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I 4433	Approaches to Teaching Science—Grades 4–8	3
C&I 4443	Approaches to Teaching Mathematics—Grades 4–8	3
C&I 4543	Approaches to Teaching Social Studies—Grades 4–8	3
C&I 4603	Mathematics and Science Approaches and Classroom Management Strategies—Grades 4–8	3
C&I 4623	Applied Teaching: Grades 4–8	3
C&I 4626	Student Teaching: Grades 4–8	6

Total Credit Hours 21

B.A. in Interdisciplinary Studies, Grades 4–8 Generalist Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
MAT 1023	College Algebra with Applications (core)	3
	Life & Physical Sciences Core (BIO 1233 recommended)	3
	American History Core (HIS 1053 recommended)	3

Spring

WRC 1023	Freshman Composition II (Q) (core)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society (Core)	3
IDS 2113	Society and Social Issues (core and major)	3
	American History Core (HIS 2053 recommended)	3
	Life & Physical Sciences Core (BIO 1243 recommended)	3

Summer

IDS 2403 or 3234	Physical Science	3
IDS 2413 or 3224	Earth Systems Science	3

Second Year

Fall		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 3003	STEM in Social Contexts	3
MAT 1153	Essential Elements in Mathematics I	3
POL 1013	Introduction to American Politics (core)	3
	Language, Philosophy & Culture Core (AAS 2013 or MAS 2013 recommended)	3

Spring

GRG 1013	Fundamentals of Geography (Core)	3
IDS 3013	Diversity, Equity, and the Social Sciences	3

MAT 1163	Essential Elements in Mathematics II	3
POL 1133 or 1213	Texas Politics and Society (core)	3
	Creative Arts Core (MAS 2023 recommended)	3
Third Year		
Fall		
Admission to the Teacher Certification Program		
BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
RDG 3523	Reading for Teachers—Grades 4–8	3
RDG 3803	Writing Development and Processes	3
Spring		
EDP 4203	Assessment and Evaluation ¹	3
IDS 3123	Culture, Literature, and Fine Arts	3
RDG 3533	Reading and Writing Across the Disciplines—Grades 4–8 ¹	3
RDG 3633	Literature and Other Texts Across the Content Areas—Grades 4–8	3
SPE 3603	Introduction to Special Education	3
Summer		
IDS 3713	Interdisciplinary Inquiry	3
Fourth Year		
Fall		
C&I 4433	Approaches to Teaching Science—Grades 4–8 ^{1,2}	3
C&I 4443	Approaches to Teaching Mathematics—Grades 4–8 ^{1,2}	3
C&I 4543	Approaches to Teaching Social Studies—Grades 4–8 ^{1,2}	3
C&I 4603	Mathematics and Science Approaches and Classroom Management Strategies—Grades 4–8 ^{1,2}	3
C&I 4623	Applied Teaching: Grades 4–8 ^{1,2}	3
Spring		
C&I 4626	Student Teaching: Grades 4–8 ³	6
Total Credit Hours:		120.0

¹ Admission to the Teacher Certification Program is required.
² Must be taken concurrently.
³ A grade of "C-" or better is required to be recommended for the Teacher Certificate.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Language Arts/Reading/Social Studies Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with grades 4–8 Language Arts/Reading/Social Studies certification is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and BIO 1243 should be used to satisfy the core requirement in Life and Natural Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. COM 2113 is recommended to satisfy the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

IDS Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
GRG 1013	Fundamentals of Geography	3
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3

Total Credit Hours **33**

Certification Requirements

EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Acquisition in Early Adolescence	3

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
RDG 3523	Reading for Teachers—Grades 4–8	3
RDG 3633	Literature and Other Texts Across the Content Areas—Grades 4–8	3
RDG 3803	Writing Development and Processes	3
SPE 3603	Introduction to Special Education	3
The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.		
RDG 3533	Reading and Writing Across the Disciplines—Grades 4–8	3
Total Credit Hours		30

Professional Education Requirements

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I 4543	Approaches to Teaching Social Studies—Grades 4–8	3
C&I 4553	Approaches to Service-Learning in Social Studies—Grades 4–8	3
C&I 4603	Mathematics and Science Approaches and Classroom Management Strategies—Grades 4–8	3
C&I 4623	Applied Teaching: Grades 4-8	3
C&I 4626	Student Teaching: Grades 4–8	6
Total Credit Hours		18

B.A. in Interdisciplinary Studies, Grades 4–8 Language Arts/Reading/Social Studies Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Life & Physical Sciences Core (BIO 1233 recommended)		3
American History Core (HIS 1053 recommended)		3

Spring

WRC 1023	Freshman Composition II (Q) (core)	3
IDS 2113	Society and Social Issues (core)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
Life & Physical Sciences Core (BIO 1243 recommended)		3
American History Core (HIS 2053 recommended)		3

Summer

IDS 2403 or 3234	Physical Science	3
IDS 2413 or 3224	Earth Systems Science	3

Second Year

Fall

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 3003	STEM in Social Contexts	3
MAT 1153	Essential Elements in Mathematics I	3
POL 1013	Introduction to American Politics (core)	3
Language, Philosophy & Culture Core (AAS 2013 or MAS 2013 recommended)		3

Spring

IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 1163	Essential Elements in Mathematics II	3
POL 1133	Texas Politics and Society(core)	3
Component Area Option Core (COM 2113 recommended)		3
Creative Arts Core (MAS 2023 recommended)		3

Third Year

Fall

ESL 3063	Second Language Acquisition in Early Adolescence	3
GRG 1013	Fundamentals of Geography	3
IDS 3713	Interdisciplinary Inquiry	3
IDS 3123	Culture, Literature, and Fine Arts	3
RDG 3803	Writing Development and Processes	3

Spring

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
RDG 3523	Reading for Teachers—Grades 4–8	3
RDG 3633	Literature and Other Texts Across the Content Areas—Grades 4–8	3
SPE 3603	Introduction to Special Education	3

Summer

EDP 4203	Assessment and Evaluation	3
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Fourth Year

Fall

RDG 3533	Reading and Writing Across the Disciplines—Grades 4–8 ¹	3
C&I 4543	Approaches to Teaching Social Studies—Grades 4–8 ¹	3
C&I 4553	Approaches to Service-Learning in Social Studies—Grades 4–8 ¹	3
C&I 4603	Mathematics and Science Approaches and Classroom Management Strategies—Grades 4–8 ¹	3
C&I 4623	Applied Teaching: Grades 4-8 ¹	3

Spring

C&I 4626	Student Teaching: Grades 4–8 ²	6
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Total Credit Hours:	120.0
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- 1 Admission to the Teacher Certification Program is required. Courses must be taken concurrently.
- 2 A grade of "C-" or better is required to be recommended for the Teacher Certificate.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Mathematics/Science Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with Grades 4–8 Mathematics/Science certification is 120 hours, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and AST 1013 or AST 1033 should be used to satisfy the core requirement in Life and Natural Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. COM 2113 is recommended to satisfy the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

IDS Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

AST 1013	Introduction to Astronomy	3
or AST 1033	Exploration of the Solar System	
IDS 3201	Inquiry in Physical Science	1
or IDS 3211	Inquiry in Earth Systems Science	
IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
MAT 1093	Precalculus	3
MAT 1214	Calculus I	4
MAT 3103	Data Analysis and Interpretation	3
MAT 3123	Fundamentals of Geometry	3
PHY 1603	Algebra-based Physics I	3

PHY 1611	Algebra-based Physics I Laboratory	1
Total Credit Hours		42

Certification Requirements

EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
SPE 3603	Introduction to Special Education	3
RDG 3523	Reading for Teachers—Grades 4–8	3
The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.		
RDG 3533	Reading and Writing Across the Disciplines—Grades 4–8	3
Total Credit Hours		24

Professional Education Requirements

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I 4433	Approaches to Teaching Science—Grades 4–8	3
C&I 4443	Approaches to Teaching Mathematics—Grades 4–8	3
C&I 4603	Mathematics and Science Approaches and Classroom Management Strategies—Grades 4–8	3
C&I 4623	Applied Teaching: Grades 4–8	3
C&I 4626	Student Teaching: Grades 4–8	6
Total Credit Hours		18

B.A. in Interdisciplinary Studies, Grades 4–8 Mathematics/Science Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall	Credit Hours	
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History Core (HIS 1053 recommended)		3
Life & Physical Sciences Core (BIO 1233 recommended)		3
Spring		
AST 1013 or 1033	Introduction to Astronomy (core)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
MAT 1093	Precalculus	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History Core (HIS 2053 recommended)		3

Summer		
IDS 2403 or 3234	Physical Science	3
IDS 2413 or 3224	Earth Systems Science	3
Second Year		
Fall		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2113	Society and Social Issues (core and major)	3
MAT 1214	Calculus I	4
POL 1013	Introduction to American Politics (core)	3
Language Philosophy & Culture Core (AAS 2013 or MAS 2013 recommended)		
Spring		
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 3123	Fundamentals of Geometry	3
PHY 1603 & PHY 1611	Algebra-based Physics I	4
POL 1133 or 1213	Texas Politics and Society (core)	3
Creative Arts Core (MAS 2023 recommended)		
Summer		
Component Area Option Core (COM 2113 recommended)		
Third Year		
Fall		
Admission to the Teacher Certification Program		
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
IDS 3003	STEM in Social Contexts	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3201 or 3211	Inquiry in Physical Science (if IDS 2403 and IDS 2413 were taken)	1
MAT 3103	Data Analysis and Interpretation	3
Spring		
EDP 4203	Assessment and Evaluation ¹	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
IDS 3713	Interdisciplinary Inquiry	3
RDG 3523	Reading for Teachers—Grades 4–8	3
SPE 3603	Introduction to Special Education	3
Fourth Year		
Fall		
C&I 4433	Approaches to Teaching Science—Grades 4–8 ^{1,2}	3
C&I 4443	Approaches to Teaching Mathematics—Grades 4–8 ^{1,2}	3
C&I 4603	Mathematics and Science Approaches and Classroom Management Strategies—Grades 4–8 ^{1,2}	3
C&I 4623	Applied Teaching: Grades 4-8 ^{1,2}	3

RDG 3533	Reading and Writing Across the Disciplines—Grades 4–8 ^{1,2}	3
Spring		
C&I 4626	Student Teaching: Grades 4–8 ³	6
Total Credit Hours:		120.0

- ¹ Admission to the Teacher Certification Program is required.
- ² Must be taken concurrently.
- ³ A grade of "C-" or better is required to be recommended for the Teacher Certificate.

Bachelor of Arts Degree in Interdisciplinary Studies (EC–12 Special Education Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with EC–12 Special Education certification is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033 or PHY 1013 should be used to satisfy the core requirement in Life and Physical Sciences. AAS 2013 or MAS 2013 is recommended to satisfy the core requirement in Language, Philosophy, and Culture. MAS 2023 should be used to satisfy the core requirement in Creative Arts. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

IDS Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3

Total Credit Hours		21
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Certification Requirements

ECE 3603	Language and Literacy Acquisition	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3

RDG 3523	Reading for Teachers—Grades 4–8	3
RDG 3803	Writing Development and Processes	3
SPE 3603	Introduction to Special Education	3
SPE 3693	Special Education Law	3
The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.		
SPE 3623	Assessment of Students with Mild/Moderate Disabilities	3
SPE 3633	Classroom and Behavior Management for Students with Disabilities	3
SPE 3673	Assessment: Students with ASD and Developmental Disabilities	3
SPE 3683	Special Education Across the Lifespan	3
SPE 4683	Communication and Collaboration in Special Education	3
SPE 4693	Assistive Technology	3
Total Credit Hours		39

Professional Education Requirements

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program. IDS degree requirements and IDS support courses listed above are prerequisite to enrollment in Professional Special Education courses.

SPE 3653	Practicum in Special Education (Introduction)	3
SPE 4623	Mathematics Instruction for Students with Disabilities	3
SPE 4643	Instruction for Students with Mild/Moderate Disabilities	3
SPE 4653	Practicum in Special Education (Advanced)	3
SPE 4673	Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities	3
Student Teaching:		
C&I 4716	Student Teaching: All Level EC–12	6
Total Credit Hours		21

B.A. in Interdisciplinary Studies, EC–12 Special Education Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
MAT 1023	College Algebra with Applications (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
AST 1033 or PHY 1013	Exploration of the Solar System (core)	3
HIS 2053	Texas History (core)	3

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3	
IDS 2113	Society and Social Issues (core and major)	3	
WRC 1023	Freshman Composition II (Q) (core)	3	
Summer			
AAS 2013 or MAS 2013	Introduction to African American Studies	3	
MAS 2023	Latino Cultural Expressions (core)	3	
POL 1133 or 1213	Texas Politics and Society (core)	3	
Component Area Option core			3
Second Year			
Fall			
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3	
ESL 3023	Second Language Teaching and Learning in EC–6	3	
IDS 3123	Culture, Literature, and Fine Arts	3	
MAT 1153	Essential Elements in Mathematics I	3	
RDG 3803	Writing Development and Processes	3	

Spring

ECE 3603	Language and Literacy Acquisition	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 1163	Essential Elements in Mathematics II	3
SPE 3603	Introduction to Special Education	3
SPE 3693	Special Education Law	3

Third Year

Fall

Admission to the Teacher Certification Program		
RDG 3523	Reading for Teachers—Grades 4–8	3
SPE 3623	Assessment of Students with Mild/Moderate Disabilities ¹	3
SPE 3653	Practicum in Special Education (Introduction) ¹	3
SPE 4623	Mathematics Instruction for Students with Disabilities ¹	3
SPE 4643	Instruction for Students with Mild/Moderate Disabilities ¹	3

Spring

IDS 3003	STEM in Social Contexts	3
SPE 3633	Classroom and Behavior Management for Students with Disabilities ²	3
SPE 3673	Assessment: Students with ASD and Developmental Disabilities ²	3
SPE 3683	Special Education Across the Lifespan ²	3

SPE 4673	Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities ²	3
Fourth Year		
Fall		
IDS 3713	Interdisciplinary Inquiry	3
SPE 4653	Practicum in Special Education (Advanced) ³	3
SPE 4683	Communication and Collaboration in Special Education ³	3
SPE 4693	Assistive Technology ³	3
Spring		
C&I 4716	Student Teaching: All Level EC–12	6
Total Credit Hours:		120.0

- ¹ Must be taken concurrently.
- ² Must be taken concurrently.
- ³ Must be taken concurrently.

Secondary Certification Programs

Students seeking certification to teach at the secondary level (grades 8–12) must obtain a bachelor’s degree in the academic area in which they plan to teach. They should consult with their advisor in the department in which their degree is contained. They should also consult with their academic advisor for information regarding secondary certification requirements and admission to the Teacher Certification Program. Requirements for degrees and certificates have been carefully coordinated; however, there may be specific degree requirements that are not required in the certification program, and specific certification requirements that may not be required in the degree program. Certificate program requirements are approved by the State of Texas.

Core Curriculum Requirements: Students should refer to the appropriate section of this catalog for a listing of Core Curriculum requirements for the degree they are seeking.

The number of semester credit hours required for secondary certification is 30. There are additional requirements for students seeking certification in English Language Arts and Reading (ELAR). Students seeking certification in ELAR should consult their certification advisor for information.

Certification Requirements

(For proper sequencing of these courses, students should consult a certification advisor.)

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
EDP 3203	Learning and Development in the Secondary School Adolescent	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
SPE 3603	Introduction to Special Education	3

Professional Education and Reading Coursework

Students must be admitted to the Teacher Certification Program before enrolling in Professional Education and Student Teaching coursework.

C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
EDP 4203	Assessment and Evaluation	3
RDG 3773	Reading and Writing Across the Disciplines–Secondary	3

C&I 4203, EDP 4203, and RDG 3773 are restricted classes. Advisor authorization for these classes will be issued only if all prerequisites have been completed. C&I 4203 is not offered in the Summer Semesters.

Student Teaching Component

C&I 4646	Student Teaching: Grades 8–12	6
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Total Credit Hours **30**

Department of Kinesiology, Health, and Nutrition

The Department of Kinesiology, Health, and Nutrition offers Bachelor of Science degrees for students majoring in Health and Kinesiology. Minors in Athletic Coaching, Community Health, Wellness, and a Certificate in Athletic Coaching are also offered. The Department also offers a dual degree leading to a Bachelor of Science in Nutrition and Dietetics and a Master of Dietetics Studies within the Coordinated Program in Dietetics.

The Health degree provides students the opportunity to prepare for health careers in city, county, state and national government health agencies; corporate wellness programs; and voluntary health agencies. The degree requires both academic coursework and practical experience via an internship and helps to prepare students for admission to graduate programs in public health and health promotion. Students interested in pursuing a major or minor in Health are required to consult with their academic advisor.

Students pursuing a Bachelor of Science degree in Kinesiology will select a concentration in athletic medicine, exercise science or physical education. Students with a concentration in athletic medicine are prepared to pursue careers in athletic training, physical therapy, or occupational therapy. Physical and/or occupational therapy licensure requires additional academic training in an accredited graduate program. Students interested in pursuing licensure in athletic training must apply and be accepted into the athletic training program at UTSA. Students with a concentration in exercise science are trained for careers in exercise physiology, clinical exercise, and fitness programming in corporate, commercial, and public settings. Graduates of this concentration are prepared for professional certifications in fitness and exercise physiology. The physical education concentration provides students the academic and professional experience as required by the State Board for Educator Certification. To be certified as a teacher by the State of Texas, a student must complete his or her coursework, have practical teaching experience (student teaching), and pass the Texas Examinations of Educator Standards (TExES). The graduate of this program will then be certified to teach physical education in grades pre-kindergarten–12.

The overall mission of the Coordinated Program in Dietetics (CPD) is to prepare entry-level dietitians who positively impact the nutritional status and health of individuals and the community, particularly those living in South Texas, through a solid academic education, service,

and scholarship. The CPD offers a rigorous didactic curriculum that is integrated with over 1200 clock hours of supervised experiences, aimed at preparing entry level practitioners. Students who successfully complete the all the CPD requirements receive a verification of eligibility to take the national exam administered by the Commission of Dietetics Registration to become a Registered Dietitian (RD). Dietetics professionals are instrumental in assessing the nutritional needs of individuals, interpreting the science of food and nutrition to promote health, prevent diseases, and implement medical nutrition therapy for various diseases and illnesses. Registered dietitians are employed by healthcare facilities such as hospitals, long-term care facilities, and clinics; sports, wellness and fitness centers; foodservice operations, industry, pharmaceutical and food companies; community programs and public health; government agencies, private practice, and professional health organizations.

Department Honors

The Department of Kinesiology, Health, and Nutrition awards Department Honors to certain outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection of honors designation is based on the student's academic performance and recommendation by the faculty of the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the discipline faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member. Students interested in this program should contact their professors for additional information.

Internship Policy

Experiential learning is a valuable element for health and kinesiology professionals. An internship enables the student to gain practical experience as a professional under conditions conducive to educational development. The internship is a time-limited, supervised period of health or kinesiology education activities carried out in a kinesiology- or health-oriented organization. All Health majors are required to complete an internship (6 semester credit hours, 300 hours of time on site). Kinesiology majors who are not in Teacher Certification options may take an internship course.

Internship Eligibility

Health and Kinesiology majors are eligible to apply for an internship if they:

- have completed all degree requirements of the major and support work
- have a minimum grade point average (GPA) of 2.0
- are within 13 hours of graduation (including the 6 hours of the internship).

Students who do not meet the GPA requirement will not be allowed to complete the internship. The department advisor will assign students who do not meet the GPA requirement two upper-level courses (3 credit hours each) to take in place of the internship course.

Mandatory meetings are held in the semester prior to the student's enrolling in the internship. Meeting dates for each semester are published

in the UTSA Class Schedule. These meetings are held in June (for Fall), October (for Spring), and March (for Summer). Students are required to meet with their academic advisor prior to the meeting to verify that they are eligible for the internship. This must be done by October 1st, March 1st, or May 1st for the respective internship meeting. An e-mail will be sent within the first week of classes to all Kinesiology and Health majors with more than 110 semester credit hours, to inform them of this requirement and to ease the burden on the advising staff. Students must bring a signed degree plan from their advisor to the mandatory internship meeting.

Students who miss the meeting must contact the department internship coordinator no later than three business days after the missed meeting to make special arrangements. Failure to do so will result in being ineligible for the internship in the following semester. Extenuating circumstances must be documented and will be considered on a case-by-case basis.

Students requesting an internship at a site that requires a criminal background check are responsible for having the background check completed and submitted to the internship site for approval. Students are responsible for paying any fees associated with the completion of the background check. Students must have the background check completed and accepted by the internship site when the work plan for the internship is submitted.

Appeal Process

Students who wish to appeal the internship requirement due to prior work experience may do so by completing and submitting the appeal form, available from the academic advisor, with written documentation to a three-member review committee. Prior work experience is defined as a minimum of three years full-time work experience in the field of the respective degree. Written documentation submitted with the form includes: 1) a letter from the student detailing his or her work experience, how it fits his or her degree plan, and his or her career goals; 2) the student's resume; and 3) a letter from his or her work supervisor verifying employment and stating the extent of their job responsibilities and the relationship to the degree. The appeals packet must be received by the department internship coordinator no later than October 7th, March 7th, or May 7th, for the Spring, Summer, or Fall semesters, respectively. The committee will meet prior to the internship meeting to discuss the appeals and make a recommendation to the Department Chair. Students who are denied appeals must attend the internship meeting and complete the internship.

- Bachelor of Science Degree in Health (Community Health and Preventive Services Specialization) (p. 96)
- Bachelor of Science Degree in Kinesiology (Athletic Medicine Concentration) (p. 98)
- Bachelor of Science Degree in Kinesiology (Exercise Science Concentration) (p. 100)
- Bachelor of Science Degree in Kinesiology (Physical Education Concentration) (p. 102)
- Bachelor of Science Degree in Nutrition and Dietetics (p. 104)

Bachelor of Science Degree in Health (Community Health and Preventive Services Specialization)

This program provides students with the opportunity to pursue a Bachelor of Science degree in Health for students interested in careers in community health, public health and health promotion. All degree core,

designated electives, and support work must be completed with a grade of “C–” or better.

Admission Policy

The goal of admission requirements for the Health degree is to provide its undergraduate students with a program of study with the highest possible standards. To achieve this goal, the admission policy is designed to identify those students most likely to succeed in health education. All applicants for admission to the Health degree will be admitted to the program as pre-health students. Academic performance for declaration of the Health major will be evaluated after the following criteria have been met. To declare a Health major, a pre-health student must have:

- completed 30 semester credit hours and be in good standing with the University
- successfully completed the following or equivalent courses with a grade of “C–” or better:

WRC 1013	Freshman Composition I (Q)	3
WRC 1023	Freshman Composition II (Q)	3
HTH 2413	Introduction to Community and Public Health	3

Applicants who have completed all of the above courses as equivalent transferable college credit with a grade of “C–” or better and have no UTSA coursework can declare a Health major if they:

- meet all UTSA undergraduate admission requirements
- have completed 30 semester credit hours.

A pre-health student will not be able to register for upper-division, majors-only courses at UTSA until they have completed the courses listed above with the required grade point average. A student can complete each course required for admission twice in order to reach the required grade; however, students who are not able to meet the criteria after completing the course for the second time will no longer be considered a pre-health student and their major will be changed from pre-health to undeclared (UND) in the University student record system. The student must then choose a major other than Health.

Academic advising for students seeking the degree is available in the Life and Health Sciences Advising Center.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements

Students seeking the Bachelor of Science degree in Health must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy one of the Life & Physical Sciences core requirements. HTH 2413 should be used to satisfy the core requirement in Social and Behavioral Sciences. COM 2113 should be used to satisfy the core requirement in the Component Area Option.

All candidates for the degree must complete the following degree requirements in addition to the Core Curriculum requirements.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Health must successfully complete each of the following Gateway Courses with a grade of “C–” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

HTH 2413	Introduction to Community and Public Health
HTH 3503	Theories of Health Behavior

Degree Requirements

A. Degree core requirements

HTH 2413	Introduction to Community and Public Health	3
HTH 2601	Field-Based Skills in Community Health and Preventive Services	1
HTH 2623	Applied Technology for Research and Health Education	3
HTH 3503	Theories of Health Behavior	3
HTH 3513	Community Health	3
HTH 3663	Program Planning and Evaluation	3
HTH 4503	Human Disease and Epidemiology	3
HTH 4513	Consumer Health	3
HTH 4543	Environmental Health and Safety	3
HTH 4921	Capstone for Community Health and Preventive Services	1
HTH 4936	Internship in Health	6

B. Support Work

BIO 1233	Contemporary Biology I	3
BIO 2083	Human Anatomy	3
BIO 2091	Human Anatomy Laboratory	1
BIO 2103	Human Physiology	3
BIO 2111	Human Physiology Laboratory	1
COM 2113	Public Speaking	3
MAT 1023	College Algebra with Applications	3
STA 1053	Basic Statistics	3

C. Designated electives

Select 15 semester credit hours of the following: 15

Select at least two of the following four courses:

HTH 3303	Physical Activity and Health
HTH 3533	Drugs and Health
HTH 4523	Understanding Human Sexuality
HTH 4533	Nutrition and Health

Additional designated electives can be taken from the following courses:

HTH 2133	School Health
HTH 2513	Personal Health
HTH 3003	Survey of Drugs and Health
HTH 3013	Survey of Human Nutrition
HTH 3023	Survey of Human Sexuality

HTH 3043	Principles of Weight Management
HTH 3523	Worksite Health Promotion
HTH 3543	Growth and Development
HTH 3553	Emotional Wellness
HTH 3563	Child and Adolescent Health Promotion
HTH 4953	Special Studies in Health
MGT 3013	Introduction to Organization Theory, Behavior, and Management
or MGT 4953	Special Studies in Management

D. Free electives 11-23

All candidates for this degree must complete a minimum of 11 hours of free electives to meet the 120 hour minimum for the degree, including a sufficient number of electives at the upper-division level to meet the UTSA minimum of 39 upper-division hours.

Total Credit Hours 78-90**B.S. in Health – Recommended Four-Year Academic Plan****First Year****Fall** **Credit Hours**

AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1023	College Algebra with Applications	3
WRC 1013	Freshman Composition I (Q) (core)	3
University core course		3
University core course		3

Spring

BIO 1233	Contemporary Biology I (core)	3
HTH 2413	Introduction to Community and Public Health	3
STA 1053	Basic Statistics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
University core course		3

Second Year**Fall**

University core course		3
University core course		3
University core course		3
University core course		3
Free elective		2

Spring

BIO 2083	Human Anatomy	3
BIO 2091	Human Anatomy Laboratory	1
COM 2113	Public Speaking	3
HTH 2601	Field-Based Skills in Community Health and Preventive Services	1
HTH 3503	Theories of Health Behavior	3
Free elective		3
Free elective		3

Third Year**Fall**

BIO 2103	Human Physiology	3
BIO 2111	Human Physiology Laboratory	1

HTH 2623	Applied Technology for Research and Health Education	3
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Free elective 3

HTH 3513 Community Health 3

HTH 3663 Program Planning and Evaluation 3

Spring

HTH 4503 Human Disease and Epidemiology 3

Designated elective 3

Designated elective 3

Designated elective 3

Free elective 3

Fourth Year**Fall**

HTH 4513 Consumer Health 3

HTH 4543 Environmental Health and Safety 3

Designated elective 3

Designated elective 3

Free elective 3

Spring

HTH 4936 Internship in Health 6

HTH 4921 Capstone for Community Health and Preventive Services 1

Free elective 3

Free elective 3

Total Credit Hours: 120.0**Bachelor of Science Degree in Kinesiology**

This program provides students with the opportunity to pursue a Bachelor of Science degree in Kinesiology. Students are prepared for careers in athletic training, exercise science or teaching physical education (pre-kindergarten–12). All required Kinesiology (KIN) courses and support work must be completed with a grade of “C–” or better.

Academic advising for students seeking the Kinesiology degree is available in the Life and Health Sciences Advising Center.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, of which at least 39 must be at the upper-division level.

Students seeking the Bachelor of Science degree in Kinesiology must fulfill University Core Curriculum requirements in the same manner as other students.

Bachelor of Science Degree in Kinesiology (Athletic Medicine Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science degree in Kinesiology with a concentration in Athletic Medicine. Students are trained for careers in athletic training, and this is a pre-professional allied health training program for physical therapy and occupational therapy. Additional coursework may be required for acceptance into an allied health training program. Students should

contact the Health Professions Office for details. All kinesiology degree core and support work must be completed with a grade of “C–” or better.

Admission Policy

The goal of admission requirements for the Athletic Medicine concentration is to provide its undergraduate students with a program of study with the highest possible standards. To achieve this goal, the admission policy is designed to identify those students most likely to succeed in athletic medicine. All applicants for admission to the Athletic Medicine concentration will be admitted to the program as pre-Athletic Medicine students. Academic performance for declaration of the Athletic Medicine concentration will be evaluated after the following criteria has been met. To declare an Athletic Medicine concentration, a pre-Athletic Medicine student must have:

- completed 30 semester credit hours with a cumulative grade point average of 2.75
- successfully completed the following or equivalent courses with a grade of “C–” or better:

BIO 1404	Biosciences I	4
KIN 2303	Foundations of Kinesiology	3
MAT 1073	Algebra for Scientists and Engineers	3
WRC 1013	Freshman Composition I (Q)	3

Applicants who have completed all of the above courses as equivalent transferable college credit with a grade of “C–” or better and have no UTSA coursework can declare an Athletic Medicine concentration if they:

- meet all UTSA undergraduate admission requirements
- have completed 30 semester credit hours

Additionally, incoming freshman with less than 30 completed semester credit hours may declare an Athletic Medicine concentration if they:

- graduated in the top 25 percent of their high school class and are in good standing with the University

A pre-Athletic Medicine student will not be able to register for upper-division, majors-only courses at UTSA until they have completed the courses listed above with the required grade point average. A student can complete each course required for admission twice in order to reach the required grade; however, students who are not able to meet the criteria after completing the course twice will no longer be considered a pre-Athletic Medicine student and their major will be changed to undeclared (UND) in the University student record system.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, of which at least 39 must be at the upper-division level.

Core Curriculum Requirements

Students seeking the Bachelor of Science degree in Kinesiology with a concentration in Athletic Medicine must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1404 and BIO 1414 should be used to satisfy the core requirement in Life and Physical Sciences. PSY 1013 or SOC 1013 is recommended to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Kinesiology must successfully complete each of the following Gateway Courses with a grade of “C–” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

KIN 2303	Foundations of Kinesiology
KIN 3313	Anatomy and Physiology for Kinesiology

Degree Requirements

A. Required KIN Courses

KIN 2141	Medical Terminology	1
KIN 2303	Foundations of Kinesiology	3
KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3303	Athletic Injuries and Training Procedures	3
KIN 3313	Anatomy and Physiology for Kinesiology	3
KIN 3323	Biomechanics	3
KIN 3433	Exercise Physiology	3
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 3463	Musculoskeletal Anatomy	3
KIN 4043	Therapeutic Modalities	3
KIN 4143	Advanced Athletic Training	3
KIN 4243	Musculoskeletal Rehabilitation	3
KIN 4253	Exercise Nutrition	3
KIN 4403	Motor Learning	3
KIN 4931	Clinical Applications of Athletic Injuries (repeated for 6 semester credit hours)	6
or KIN 4936	Internship in Kinesiology	

B. Support Courses

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2083	Human Anatomy	3
BIO 2091	Human Anatomy Laboratory	1
BIO 2103	Human Physiology	3
BIO 2111	Human Physiology Laboratory	1
CHE 1103	General Chemistry I	3
CHE 1113	General Chemistry II	3
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
COM 1053	Business and Professional Speech	3
or COM 2113	Public Speaking	
MAT 1073	Algebra for Scientists and Engineers	3
PHY 1603	Algebra-based Physics I	3
PHY 1611	Algebra-based Physics I Laboratory	1
PHY 1623	Algebra-based Physics II	3
PHY 1631	Algebra-based Physics II Laboratory	1

PSY 1013	Introduction to Psychology	3
SOC 1013	Introduction to Sociology	3
STA 1053	Basic Statistics	3
C. Elective		2
Total Credit Hours		93

B.S. in Kinesiology, Athletic Medicine Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
KIN 2303	Foundations of Kinesiology	3
MAT 1073	Algebra for Scientists and Engineers	3
PSY 1013	Introduction to Psychology	3
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

BIO 1404	Biosciences I (core and major)	4
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
SOC 1013	Introduction to Sociology	3
WRC 1023	Freshman Composition II (Q) (core)	3
Elective		2

Second Year

Fall		
BIO 1414	Biosciences II	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
KIN 2141	Medical Terminology	1
KIN 4931	Clinical Applications of Athletic Injuries	1
PHY 1603	Algebra-based Physics I	3
PHY 1611	Algebra-based Physics I Laboratory	1
University core		3

Spring

BIO 2083	Human Anatomy	3
BIO 2091	Human Anatomy Laboratory	1
KIN 3313	Anatomy and Physiology for Kinesiology	3
KIN 4931	Clinical Applications of Athletic Injuries	1
STA 1053	Basic Statistics (core)	3
PHY 1623	Algebra-based Physics II	3
PHY 1631	Algebra-based Physics II Laboratory	1

Third Year

Fall		
BIO 2111	Human Physiology Laboratory	1
BIO 2103	Human Physiology	3
KIN 3071	Musculoskeletal Fitness Instruction	1

KIN 3303	Athletic Injuries and Training Procedures	3
KIN 3433	Exercise Physiology	3
KIN 3463	Musculoskeletal Anatomy	3
KIN 4931	Clinical Applications of Athletic Injuries	1

Spring

KIN 3323	Biomechanics	3
KIN 4143	Advanced Athletic Training	3
KIN 4253	Exercise Nutrition	3
KIN 4931	Clinical Applications of Athletic Injuries	1
University core course		3

Fourth Year

Fall		
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 4243	Musculoskeletal Rehabilitation	3
KIN 4931	Clinical Applications of Athletic Injuries	1
COM 1053 or 2113	Business and Professional Speech	3
University core course		3
University core course		3
Spring		
KIN 4043	Therapeutic Modalities	3
KIN 4403	Motor Learning	3
KIN 4931	Clinical Applications of Athletic Injuries	1
University core course		3
University core course		3

Total Credit Hours: 120.0

Bachelor of Science Degree in Kinesiology (Exercise Science Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science degree in Kinesiology with a concentration in Exercise Science. Students are trained for careers in exercise science. All kinesiology degree core and support work must be completed with a grade of "C–" or better.

Admission Policy

The goal of admission requirements for the Exercise Science concentration is to provide its undergraduate students with a program of study with the highest possible standards. To achieve this goal, the admission policy is designed to identify those students most likely to succeed in kinesiology education. All applicants for admission to the Exercise Science concentration will be admitted to the program as pre-Exercise Science students. Academic performance for declaration of the Exercise Science concentration will be evaluated after the following criteria has been met. To declare an Exercise Science concentration, a pre-Exercise student must have:

- completed 30 semester credit hours with a cumulative grade point average of 2.5

- successfully completed the following or equivalent courses with a grade of "C–" or better:

BIO 1233	Contemporary Biology I	3
or BIO 1404	Biosciences I	
KIN 2303	Foundations of Kinesiology	3
MAT 1023	College Algebra with Applications	3
or MAT 1073	Algebra for Scientists and Engineers	
WRC 1013	Freshman Composition I (Q)	3

Applicants who have completed all of the above courses as equivalent transferable college credit with a grade of "C–" or better and have no UTSA coursework can declare an Exercise Science concentration if they:

- meet all UTSA undergraduate admission requirements
- have completed 30 semester credit hours

Additionally, incoming freshman with less than 30 completed semester credit hours may declare as an Exercise Science concentration if they:

- graduated in the top 25 percent of their high school class and are in good standing with the University

A pre-Exercise Science student will not be able to register for upper-division, majors-only courses at UTSA until they have completed the courses listed above with the required grade point average. A student can complete each course required for admission twice in order to reach the required grade of 2.5 out of 4.0; however, students who are not able to meet the criteria after completing the course twice will no longer be considered a pre-Exercise Science student and their major will be changed to undeclared (UND) in the University student record system.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, of which at least 39 must be at the upper-division level.

Core Curriculum Requirements

Students seeking the Bachelor of Science degree in Kinesiology with a concentration in Exercise Science must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1404 or BIO 1233 should be used to satisfy one of the Life and Physical Sciences core requirements. COM 2113 should be used to satisfy the Component Area Option requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Kinesiology must successfully complete each of the following Gateway Courses with a grade of "C–" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

KIN 2303	Foundations of Kinesiology
KIN 3313	Anatomy and Physiology for Kinesiology

Degree Requirements

A. Required KIN Courses

KIN 2303	Foundations of Kinesiology	3
KIN 3051	Group Fitness Instruction	1
KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3313	Anatomy and Physiology for Kinesiology	3
KIN 3321	Biomechanics Laboratory	1
KIN 3323	Biomechanics	3
KIN 3431	Exercise Physiology Laboratory	1
KIN 3433	Exercise Physiology	3
KIN 3443	Graded Exercise Testing and Fitness Assessment	3
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 4023	Exercise Psychology	3
KIN 4253	Exercise Nutrition	3
KIN 4401	Motor Learning Laboratory	1
KIN 4403	Motor Learning	3
KIN 4936	Internship in Kinesiology	6

B. Support Courses

BIO 1233	Contemporary Biology I	3
or BIO 1404	Biosciences I	
BIO 2083	Human Anatomy	3
BIO 2091	Human Anatomy Laboratory	1
BIO 2103	Human Physiology	3
BIO 2111	Human Physiology Laboratory	1
COM 2113	Public Speaking	3
MAT 1023	College Algebra with Applications	3
STA 1053	Basic Statistics	3

C. Minor 18-24

D. Electives 10-4

Total Credit Hours 86

B.S. in Kinesiology, Exercise Science Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
KIN 2303	Foundations of Kinesiology	3
MAT 1023	College Algebra with Applications	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
BIO 2083	Human Anatomy	3
BIO 2091	Human Anatomy Laboratory	1
STA 1053	Basic Statistics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Minor course		3
Life & Physical Sciences core		3

Second Year

Fall

BIO 2103	Human Physiology	3
BIO 2111	Human Physiology Laboratory	1
KIN 3051	Group Fitness Instruction	1
Minor course		3
University core course		3
University core course		3

Spring

COM 2113	Public Speaking	3
KIN 3313	Anatomy and Physiology for Kinesiology	3
Minor course		3
University core course		3
University core course		3

Third Year

Fall

KIN 3433	Exercise Physiology	3
KIN 3431	Exercise Physiology Laboratory	1
KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3323	Biomechanics	3
KIN 3321	Biomechanics Laboratory	1
Minor course		3
Elective or Minor course		3

Spring

KIN 3443	Graded Exercise Testing and Fitness Assessment	3
KIN 3441	Graded Exercise Testing and Fitness Assessment Laboratory	1
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 4023	Exercise Psychology	3
Minor course		3
Elective or Minor course		3

Fourth Year

Fall

KIN 4253	Exercise Nutrition	3
KIN 4403	Motor Learning	3
KIN 4401	Motor Learning Laboratory	1
Elective		1
Minor course		3
University core course		3
University core course		3

Spring

KIN 4936	Internship in Kinesiology	6
University core course		3
Elective or Minor course		3

Total Credit Hours: 120.0

Bachelor of Science Degree in Kinesiology (Physical Education Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science degree in Kinesiology with a concentration in Physical Education. Students are prepared for careers in teaching physical education (pre-kindergarten–12). All kinesiology degree core and support work must be completed with a grade of “C–” or better.

Academic advising for students seeking the Kinesiology degree is available in the Interdisciplinary Education Advising Center.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, of which at least 39 must be at the upper-division level.

Core Curriculum Requirements

Students seeking the Bachelor of Science degree in Kinesiology with a concentration in Physical Education must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy one of the core requirements in Life and Physical Sciences. SOC 1013 is recommended to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Kinesiology must successfully complete each of the following Gateway Courses with a grade of “C–” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

KIN 2303	Foundations of Kinesiology
KIN 3313	Anatomy and Physiology for Kinesiology

Degree Requirements

A. Required KIN Courses

KIN 2003	Computer Applications in Kinesiology and Health	3
KIN 2303	Foundations of Kinesiology	3
KIN 2421	Outdoor Activities and Innovative Games	1
KIN 2441	Management and Organization in Kinesiology and Sports	1
KIN 3001	Skill Analysis in Physical Activity: Individual Activities	1
KIN 3011	Skill Analysis in Physical Activity: Team Sports I	1
KIN 3021	Skill Analysis in Physical Activity: Team Sports II	1
KIN 3031	Skill Analysis in Physical Activity: Dual Sports	1
KIN 3051	Group Fitness Instruction	1

KIN 3061	Foundational Movement	1
KIN 3103	Motor Development	3
KIN 3303	Athletic Injuries and Training Procedures	3
KIN 3313	Anatomy and Physiology for Kinesiology	3
KIN 3323	Biomechanics	3
KIN 3413	Tactics	3
KIN 3433	Exercise Physiology	3
KIN 4113	Evaluation	3
KIN 4123	Psychosocial Aspects of Exercise and Sport	3
KIN 4343	Movement Awareness	3
KIN 4403	Motor Learning	3
KIN 4423	Developmental/Adapted Physical Activity	3
Kinesiology elective		1
B. Support Courses		
BIO 1233	Contemporary Biology I	3
COM 1043	Introduction to Communication	3
EDP 3203	Learning and Development in the Secondary School Adolescent	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
HTH 3013	Survey of Human Nutrition	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
STA 1053	Basic Statistics	3
C. Professional Education courses		
C&I 4716	Student Teaching: All Level EC–12 ¹	6
KIN 4203	Teaching Secondary Physical Education ¹	3
KIN 4303	Teaching Elementary Physical Education ¹	3
RDG 3773	Reading and Writing Across the Disciplines—Secondary ¹	3
Total Credit Hours		84

¹ Courses require an advisor code and are restricted to students who have applied and been accepted into the Teacher Certification Program.

All the courses listed for the Physical Education Concentration (84 hours) are required for teacher certification in physical education. Only the courses marked with an asterisk are restricted and require an advisor code and acceptance into the Teacher Certification Program. Advisor codes for these classes will be issued only if all prerequisites have been completed.

B.S. in Kinesiology, Physical Education Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core and major)	3
KIN 2303	Foundations of Kinesiology	3
STA 1053	Basic Statistics (core and major)	3

WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
KIN 2003	Computer Applications in Kinesiology and Health	3
KIN 2441	Management and Organization in Kinesiology and Sports	1
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
American History core		3
Language, Philosophy & Culture core		3
Second Year		
Fall		
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
KIN 3313	Anatomy and Physiology for Kinesiology	3
POL 1013	Introduction to American Politics (core)	3
Component Area Option core		3
American History core		3
Spring		
COM 1043	Introduction to Communication	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
KIN 3303	Athletic Injuries and Training Procedures	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Social & Behavioral Sciences core (SOC 1013 recommended)		3
Creative Arts core		3
Third Year		
Fall		
EDP 3203	Learning and Development in the Secondary School Adolescent	3
KIN 2421	Outdoor Activities and Innovative Games	1
KIN 3051	Group Fitness Instruction	1
KIN 3061	Foundational Movement	1
KIN 3103	Motor Development	3
KIN 3413	Tactics	3
KIN 3433	Exercise Physiology	3
KIN elective		1
Spring		
KIN 3001	Skill Analysis in Physical Activity: Individual Activities	1
KIN 3011	Skill Analysis in Physical Activity: Team Sports I	1
KIN 3323	Biomechanics	3
KIN 4123	Psychosocial Aspects of Exercise and Sport	3
KIN 4343	Movement Awareness	3
KIN 4423	Developmental/Adapted Physical Activity	3

RDG 3773	Reading and Writing Across the Disciplines—Secondary	3
Fourth Year		
Fall		
HTH 3013	Survey of Human Nutrition	3
KIN 3021	Skill Analysis in Physical Activity: Team Sports II	1
KIN 3031	Skill Analysis in Physical Activity: Dual Sports	1
KIN 4113	Evaluation	3
KIN 4203	Teaching Secondary Physical Education	3
KIN 4303	Teaching Elementary Physical Education	3
KIN 4403	Motor Learning	3
Spring		
C&I 4716	Student Teaching: All Level EC–12	6
Total Credit Hours:		120.0

Bachelor of Science Degree in Nutrition and Dietetics

The Bachelor of Science in Nutrition and Dietetics offers the initial phase of a professional program known as the Coordinated Program in Dietetics (CPD). Didactic and introductory supervised experiences are part of the curriculum and serve as a foundation for the Master of Dietetics Studies (MDS). Students must meet all admission requirements to seek the dual Bachelor of Science in Nutrition and Dietetics and the Master of Dietetics Studies. Successful completion of both degrees certifies the student as eligible to take the national exam to become Registered Dietitian (RD). Students admitted into the undergraduate program are not guaranteed placement into the MDS unless they maintain a 3.0 grade point average and have completed all degree core, support courses and Texas core with a grade of “C-” or better. Students on the B.S. in Nutrition and Dietetics track who are not able to complete the Master of Dietetics Studies, may earn the Bachelor of Science degree if they meet the University graduation requirements, but are not eligible for the verification statement to take the RD exam.

Admission Policy

The admission requirements into the Dietetics and Nutrition degree are intended to offer a program with high standards for success. Some of the requirements are known to be a good predictor of achievement in the graduate professional phase of the Coordinated Program in Dietetics. While students can declare a pre-dietetics/nutrition track, there is a restricted placement in the advanced practicum courses, which limits the capacity for admission into the Coordinated Program in Dietetics. Admission into the major as part of a cohort group occurs in the Fall semester. In order to declare a major in Dietetics and Nutrition, a student must meet the following criteria:

- Completion of all support courses and most of the Texas Core requirements with a minimum cumulative grade point average (GPA) of 3.0 (on a 4.0 scale) and be in good standing with the University.
- All prerequisite courses must be passed with a “C-” or better. Detailed information about the courses, including the Texas common course numbers may be obtained from the Undergraduate Catalog.
- No prerequisite course can be repeated more than twice to meet the grade criteria.

- All support courses (prerequisite courses) must be completed by the end of the summer semester prior to entering the program in the Fall semester.
- Submit a program application, two completed reference forms (program specific) preferably by faculty members and a statement indicating personal career goals, knowledge of the profession, commitment, interests, and motivation.
- A personal interview with the program faculty.
- Transfer students must meet all the above criteria and meet all the UTSA undergraduate admission requirements. Official transcripts from all institutions attended must be submitted.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Nutrition and Dietetics must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1073 should be used to satisfy the core requirement in Mathematics. BIO 1233 or BIO 1404 and BIO 1243 or BIO 1414 should be used to satisfy the Life and Physical Sciences requirements. ANT 1013 or SOC 1013 or PSY 1013 should be used to satisfy the Social and Behavioral Sciences requirement. STA 1053 may be used to satisfy the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

Gateway Course

Students pursuing the Bachelor of Science degree in Nutrition and Dietetics must successfully complete the following Gateway Course with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

NDT 3413 Advanced Human Nutrition

Degree Requirements

A. Degree Core Requirements

NDT 3191	Applied Food Science Practicum	1
NDT 3203	Introduction to Nutrition and Dietetics Careers	3
NDT 3292	Food Production Practicum	2
NDT 3313	Applied Food Science	3
NDT 3323	Nutrition and Health Assessment	3
NDT 3333	Nutrition Counseling and Education	3
NDT 3343	Nutrition in the Life Span	3
NDT 3353	Production and Foodservice System Management I	3
NDT 3413	Advanced Human Nutrition	3
NDT 4091	Community Service Practicum	1
NDT 4191	Nutrition Care Process Practicum	1
NDT 4313	Production and Food Service System Management II	3

NDT 4323	Medical Nutrition Therapy I	3
NDT 4333	Community Nutrition	3
NDT 4343	Nutrition in Disease Prevention and Health Promotion	3
NDT 4353	Medical Nutrition Therapy II	3
NDT 4363	Current Issues in Nutrition	3
B. Support courses		
BIO 1053	Introductory Microbiology	3
BIO 1061	Introductory Microbiology Laboratory	1
BIO 2083	Human Anatomy	3
BIO 2091	Human Anatomy Laboratory	1
BIO 2103	Human Physiology	3
BIO 2111	Human Physiology Laboratory	1
BIO 3513	Biochemistry	3
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
NDT 2043	Introduction to Nutritional Sciences	3
PSY 1013	Introduction to Psychology	3
or SOC 1013	Introduction to Sociology	
or ANT 1013	Introduction to Anthropology	
STA 1053	Basic Statistics	3

Course Sequence Guide for B.S. Degree in Nutrition and Dietetics

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements that are part of the Coordinated Program in Dietetics. *This is merely a guide and students must satisfy other admission requirements for the Coordinated Program in Dietetics; and meet with their advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take core and support courses during Summer terms to reduce course loads during long semesters. Courses in the Nutrition and Dietetics (NDT) Program are only offered once a year according to the guide below.

B.S. in Nutrition and Dietetics – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233 or 1404	Contemporary Biology I (core and major)	3
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
MAT 1073	Algebra for Scientists and Engineers (core and major)	3

WRC 1013	Freshman Composition I (Q) (core)	3
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Spring

BIO 1243 or 1414	Contemporary Biology II (core)	3
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3
	American History core	3
	Government-Political Science core	3

Second Year

Fall

BIO 1053	Introductory Microbiology	3
BIO 1061	Introductory Microbiology Laboratory	1
BIO 2083	Human Anatomy	3
BIO 2091	Human Anatomy Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
	American History core	3

Spring

BIO 2103	Human Physiology	3
BIO 2111	Human Physiology Laboratory	1
BIO 3513	Biochemistry	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
NDT 2043 or BIO 2043	Introduction to Nutritional Sciences	3
PSY 1013, SOC 1013, or ANT 1013	Introduction to Psychology (core)	3

Third Year

Fall

NDT 3191	Applied Food Science Practicum	1
NDT 3203	Introduction to Nutrition and Dietetics Careers	3
NDT 3313	Applied Food Science	3
NDT 3413	Advanced Human Nutrition	3
STA 1053	Basic Statistics (core and major)	3

Spring

NDT 3292	Food Production Practicum ¹	2
NDT 3323	Nutrition and Health Assessment	3
NDT 3333	Nutrition Counseling and Education	3
NDT 3343	Nutrition in the Life Span	3
NDT 3353	Production and Foodservice System Management I	3

Fourth Year

Fall

NDT 4091	Community Service Practicum ¹	1
NDT 4313	Production and Food Service System Management II	3
NDT 4323	Medical Nutrition Therapy I	3
NDT 4333	Community Nutrition	3
	Government-Political Science core	3
	Language, Philosophy & Culture core	3

Spring

NDT 4191	Nutrition Care Process Practicum ¹	1
NDT 4343	Nutrition in Disease Prevention and Health Promotion	3
NDT 4353	Medical Nutrition Therapy II	3
NDT 4363	Current Issues in Nutrition	3
Creative Arts core		3
Total Credit Hours:		120.0

¹ The practicum courses involve traveling off campus to affiliation sites. Check the University Schedule of Classes or with the instructor to plan the rest of the course schedule accordingly.

Note: NDT courses are only offered once a year; Fall or Spring semester based on the plan above.

- Minor in Athletic Coaching (p. 106)
- Minor in Community Health (p. 106)
- Minor in Wellness (p. 106)

Minor in Athletic Coaching

All students pursuing a minor in Athletic Coaching must complete the following 18 semester credit hours:

KIN 1101	Team Sports (repeat for a total of 3 semester credit hours)	3
KIN 3013	Theory of Coaching	3
KIN 3113	Scientific Principles of Physical Activity	3
KIN 4413	Coaching Athletics (repeated for a total of 6 semester credit hours)	6
KIN 4943	Athletic Coaching Practicum	3
Total Credit Hours		18

To declare a Minor in Athletic Coaching or to obtain advice, students should consult their academic advisor.

Minor in Community Health

All students pursuing the Minor in Community Health must complete the following 18 semester credit hours:

HTH 2413	Introduction to Community and Public Health	3
HTH 2623	Applied Technology for Research and Health Education	3
HTH 3503	Theories of Health Behavior	3
HTH 3513	Community Health	3
HTH 3663	Program Planning and Evaluation	3
HTH 4503	Human Disease and Epidemiology	3
Total Credit Hours		18

Minor in Wellness

All students pursuing the Minor in Wellness must complete the following 18 semester credit hours:

HTH 3003	Survey of Drugs and Health	3
HTH 3013	Survey of Human Nutrition	3
HTH 3023	Survey of Human Sexuality	3
HTH 3553	Emotional Wellness	3

KIN 2123	Fitness and Wellness Concepts	3
One additional Health course selected from the following:		3
HTH 2513	Personal Health	
HTH 3043	Principles of Weight Management	
HTH 3543	Growth and Development	
or HTH 4513	Consumer Health	
Total Credit Hours		18

To declare a Minor in Community Health or Wellness or to obtain advice, students should consult their academic advisor.

Certificate in Athletic Coaching

All students pursuing a Certificate in Athletic Coaching must complete the following 15 semester credit hours:

KIN 1101	Team Sports (repeated for a total of 3 semester credit hours)	3
KIN 3013	Theory of Coaching	3
KIN 3113	Scientific Principles of Physical Activity	3
KIN 4413	Coaching Athletics	3
KIN 4943	Athletic Coaching Practicum	3
Total Credit Hours		15

Teacher Certification Programs

Teacher Certification Programs for Undergraduate Students

The following describes undergraduate programs for students who are pursuing a bachelor's degree concurrently with teacher certification:

- Undergraduate students interested in teaching **pre-kindergarten through sixth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in EC–6 Generalist. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Early Childhood–Grade 6 Generalist concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.
- Undergraduate students interested in teaching in **fourth through eighth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in Language Arts/Reading/Social Studies, Mathematics/Science, or Generalist. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (grades 4–8 concentrations). Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.
- Undergraduate students interested in teaching **bilingual pre-kindergarten through sixth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in EC–6 Bilingual Generalist. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Early Childhood–Grade 6 Bilingual Generalist concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.
- Undergraduate students interested in teaching **bilingual fourth through eighth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in Bilingual 4–8 Generalist.

These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Grades 4–8 Bilingual Generalist concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.

- Undergraduate students interested in teaching **English as a Second Language in pre-kindergarten through sixth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in English as a Second Language Generalist EC–6. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Early Childhood–Grade 6 ESL Generalist concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.
- Undergraduate students interested in teaching **English as a Second Language in fourth through eighth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in English as a Second Language Generalist 4–8 Language Arts/Reading/Social Studies. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Grades 4–8 ESL concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.
- Undergraduate students interested in teaching **Special Education** will declare a major in Interdisciplinary Studies (IDS) with certification in EC–12 Special Education. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (EC–12 Special Education concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.
- Undergraduate students interested in teaching **eighth through twelfth grades** will declare a major in the academic area in which they plan to teach. These students will refer to the “Secondary Certification Programs” section of this catalog for information about specialized core curriculum and professional education coursework for which they will enroll concurrently with degree requirements. Students seeking secondary certification are advised to stay in close contact with Interdisciplinary Education Advising and Certification Center advisors.
- Students interested in teaching **physical education in pre-kindergarten through twelfth grades** will declare a major in Kinesiology with a concentration in Physical Education. These students should refer to the “Bachelor of Science Degree in Kinesiology” section of this catalog for degree and certification requirements. Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.
- Students interested in teaching **health in pre-kindergarten through twelfth grades** will declare a major in Health. These students should refer to the “Bachelor of Science Degree in Health” section of this catalog for degree and certification requirements. Degree and certification advising for this program is conducted by Interdisciplinary Education Advising and Certification Center advisors.
- Students interested in **teaching music in pre-kindergarten through twelfth grades** will declare a major in Music with a concentration in Music Studies and will choose either the Instrumental or Choral Music tracks. These students will refer to the “Bachelor of Music with a Music Studies Concentration” section in this catalog for information about degree and certification requirements. Degree advising for this program is conducted by faculty and academic advisors in the

Department of Music, while certification advising is conducted by Interdisciplinary Education Advising and Certification Center advisors.

- Students interested in teaching **art in pre-kindergarten through twelfth grades** will declare a major in Art. These students will refer to the “Bachelor of Arts Degree in Art” section of this catalog for information about degree and certification requirements. Degree advising for this program is conducted by faculty and academic advisors in the Department of Art and Art History, while certification advising is conducted by Interdisciplinary Education Advising and Certification Center advisors.

Standards

Certificate programs have been designed to meet the standards for teacher certification set by the State Board for Educator Certification (SBEC). UTSA is approved to recommend individuals for these certificates if the individual has met all of the COEHD Fitness to Teach Policy standards, and has successfully completed all academic requirements for the certificate sought.

The State of Texas utilizes the “approved program” concept in its system of teacher certification. The State:

- establishes the regulations and standards by which teachers are certified (the requirements are independent of college or university degree requirements);
- approves colleges and universities to recommend students for teacher certificates in areas where programs have been found to be in conformity with State standards and are on file with the State; and
- issues the teacher certificate directly to the student, upon recommendation by an approved college or university.

Applying to the Teacher Certification Program

Students who are pursuing an undergraduate degree together with certification and who meet the requirements for admission to the Teacher Certification Program can apply online for admission to the Teacher Certification Program. Requirements and application materials are located on the COEHD website (<http://education.utsa.edu>). Students must be accepted into the Teacher Certification Program in order to register for courses restricted to teacher certification students.

Applying for the Teacher Certificate

Upon successful completion of the bachelor’s degree, the certification program, required examinations, and student teaching (or an approved substitution for student teaching), students must apply for their certificate online at the SBEC website (<http://www.tea.state.tx.us>).

Additional eligibility requirements for recommendation for the teacher certificate include a 2.50 cumulative grade point average on a 4.00 scale, good standing status at UTSA (not on academic probation), and the recommendation of the College of Education and Human Development (COEHD).

Upon completion of processing by the Interdisciplinary Education Advising and Certification Center and by SBEC, the teacher certificate will be sent directly to the student.

Student Fitness to Teach Policy

The College of Education and Human Development has a responsibility to the educational community to ensure that individuals whom UTSA recommends to the State of Texas for teaching certification are fit to join

the teaching profession. All teacher candidates in the UTSA Teacher Certification Program (TCP) are expected to demonstrate that they are prepared to teach children and youth. This preparation results from the combination of successful completion of University coursework and the demonstration of important human characteristics and dispositions that all teachers should possess. Consult the COEHD website (<http://education.utsa.edu>) for a copy of the Fitness to Teach Policy. UTSA and the COEHD reserve the right to recommend or not recommend teacher candidates for certification. If, for whatever reason, it is determined that a student does not qualify to be recommended for a teaching certificate, the student may graduate with an IDS only degree upon completion of their degree only requirements.

Criminal Record Check

A criminal background check is a requirement for admission to the Teacher Certification Program. In addition, during each semester in which field-based courses are taken, students will be required to submit to a Criminal Record Check. For further information about criminal record check procedures, consult the COEHD Web page. Criminal record checks are conducted by the individual school districts when field work in schools is a course requirement.

Teaching Certificates for Persons with Criminal Background

In accordance with state law, the State Board for Educator Certification (SBEC) may suspend or revoke a teacher certificate or refuse to issue a teacher certificate for a person who has been convicted of a felony or misdemeanor for a crime that is directly related to the duties and responsibilities of the teaching profession (Texas Occupation Code, Section 53.021).

Certification in States Other than Texas

Once certified in Texas, teachers who move out of state may consult the NASDTEC Interstate Contract website at www.nasdtec.org (<http://www.tea.state.tx.us>) to determine if Texas has reciprocity with the state of relocation. If the state in question requires an out-of-state document to be completed, it should be forwarded to the UTSA Certification Officer in the Interdisciplinary Education Advising and Certification Center.

Students moving out of state before having completed all requirements for teacher certification in Texas will be required to complete a state-approved teacher preparation program once relocated.

Policies

Course Substitutions

UTSA certification programs have been carefully designed to meet State Board for Educator Certification (SBEC) standards and to prepare UTSA students to pass the Texas Examinations of Educator Standards (TEXES). It is, therefore, in the student's best interest to follow the approved certification program. **Course substitutions in the teacher education program are granted only in extenuating circumstances and only if appropriate substitutions are available. All requests for substitutions must be filed in writing with the Interdisciplinary Education Advising and Certification Center before the individual registers for the course.** Requested course submissions must match the required course in content, level, and grade requirements. Course substitution approvals rest within each department. Department decisions are final.

Restricted Education Courses

Restricted Education courses have strict prerequisites as specified by COEHD faculty. In order to register for a restricted course, a student must apply for advisor authorization. The Interdisciplinary Education Advising and Certification Center accepts applications for advisor authorization from approximately three weeks before registration begins until the registration process is complete. Restricted Professional Development courses are subject to change depending on state-mandated requirements. Students should consult an academic advisor about restricted courses in their program.

Waivers

Individuals who wish to request a waiver of course requirements should first contact the Interdisciplinary Education Advising and Certification Center to determine if the requirement is a UTSA or a State Board for Educator Certification requirement. Individuals who wish to request a waiver of a UTSA requirement must file a written request with the Interdisciplinary Education Advising and Certification Center. Waivers cannot be granted for the requirements mandated by the State Board for Educator Certification.

Requirements for Admission to the Teacher Certification Program

Consult the *UTSA Information Bulletin* and the COEHD website (<http://education.utsa.edu>) for additional admission requirements to the UTSA Teacher Certification Program.

Clinical Teaching (formerly Student Teaching)

The Clinical Teaching experience is an extremely important component of the certification program. The primary purpose of clinical teaching is to apply what has been learned in university courses to the professional setting (i.e., an actual classroom). It is expected that the clinical teaching component of the certification program will be completed through UTSA.

Admission to Clinical Teaching

Admission to the professional semester of clinical teaching must be requested by formal application during the semester before the student plans to clinical teach. A meeting will be held early in the semester to disseminate application information. The deadline for the application for students who plan to do clinical teaching in the Fall Semester is February 15. For students planning to do clinical teaching in the Spring Semester, the deadline for the application is October 1. Acceptance into the clinical teaching program is contingent upon completion of the following requirements:

1. Admission to the UTSA Teacher Certification Program; consult the current *UTSA Information Bulletin* for admission requirements.
2. A 2.50 cumulative grade point average on all college work attempted.
3. Completion of the Professional Education coursework (please refer to course descriptions for specific grade requirements for your program's student clinical course).
4. Students seeking supplementary certification in English as a Second Language should consult an advisor regarding additional course requirements.
5. Presentation of a negative tuberculosis report, as specified by the school district, from a licensed physician, valid at the time of registration for clinical teaching.
6. Approval of the Director of Clinical Teaching.

NOTE: The Professional Semester is a full-time commitment. The clinical teaching semester is 15 weeks with time divided between school campuses and UTSA. A clinical teacher must follow the same schedule as his or her cooperating teacher in the public schools for a full semester of consecutive, full-day, full-time clinical teaching; therefore, it is not possible to register for other courses that meet in the daytime hours. Since performance in the clinical teaching semester is a key factor used by school districts in evaluating an applicant's potential as a teacher, it is recommended that the individual not attempt to work during the clinical teaching semester. There is no special provision for financial support of clinical teachers.

Texas Examinations of Educator Standards (TExES)

The Texas Examinations of Educator Standards are state-mandated examinations whose purpose is to ensure that educators possess the necessary content and professional knowledge to teach in Texas public schools. Individuals seeking certification in the State of Texas must pass the required tests before they can be recommended for a teacher certificate and/or endorsement.

TExES tests are criterion-referenced. This means that they are designed to measure an individual's knowledge in relation to an established standard of competence rather than in relation to the performance of other individuals.

Further information on required TExES tests can be obtained in the Interdisciplinary Education Advising and Certification Center, the Office of the TExES Coordinator, or from the UTSA COEHD website (<http://education.utsa.edu>).

Women's Studies Program

The College of Education and Human Development and the Women's Studies Institute offer a Bachelor of Arts degree and a minor in Women's Studies.

Honors in Women's Studies

Students whose grade point average in Women's Studies major coursework before the start of their final year at UTSA is 3.25 or above, and whose overall grade point average is 3.00, may earn Honors in Women's Studies. Students must complete 6 semester credit hours of WS 4993 Honors Thesis, complete a substantial research paper approved by the Women's Studies Program Scholarship and Honors Committee, and maintain a 3.25 grade point average in the major. The grade point average requirements apply to all transfer work as well as all courses taken at UTSA. Students are advised to consult with the Undergraduate Advisor of Record for the Women's Studies Program regarding requirements and appropriate deadlines.

Bachelor of Arts Degree in Women's Studies

The major in Women's Studies provides students with the opportunity to examine the social, historical, political, and cultural experiences of women and men from an interdisciplinary perspective. Emphasis on cross-disciplinary research methods enables students to pursue a theoretically-informed understanding of women and issues of gender and sexuality in diverse U.S. and global cultures and across time.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Women's Studies must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Major courses

1. Required courses

WS 2013	Introduction to Women's Studies	3
WS 3613	Feminist Research Methodologies	3
WS 4623	Feminist Theories	3
WS 4933	Internship in Women's Studies	3
WS 4973	Seminar in Women's Studies	3

2. Select 1 course from the Globalization and Borderlands group below 3

3. Select 1 course from the Culture and Society group below 3

B. Groups

Select eight courses from at least two of the following groups: 24

Theory and Methods

ENG 4393	Feminist Theory of Literature
POL 3163	Introduction to Feminist Theory
WS 3953	Special Topics in Women Writers
WS 4953	Special Topics in Women's Studies

Globalization and Borderlands

BBL 2023	Latino Cultural Expressions
GRG 3653	Gender and Cities: An Introduction to Feminist Geography
HIS 3133	Themes in the Social History of the United States
WS 4863	Feminism and Globalization

Culture and Society

AMS 3443	Studies in Gender and Sexuality
ANT 3603	Sex, Gender, and Culture
BBL 3023	Mexican American Culture
BBL 3043	Social Psychological Considerations in Mexican American Communities
BIO 2003	Biology of Human Reproduction
CRJ 4463	Gender and Crime
ENG 3133	Women and Literature
HIS 3043	History of Women in the United States: Pre-Columbus to 1890
HIS 3053	History of Women in the United States: Since 1890

HIS 3963	Women and Gender in India
HTH 3023	Survey of Human Sexuality
IDS 2113	Society and Social Issues
MAS 2013	Introduction to Chicano(a) Studies
POL 3183	Women in Politics
PSY 3303	Psychological Perspectives on Gender
PSY 4193	Relationships
SOC 3163	Families in Society
SOC 3263	Latinas in U.S. Society
SOC 3283	Poverty
SOC 3293	Sociology of Gender
SOC 3413	Sociology of the Mexican American Community
SOC 3513	Children and Society
WS 2023	Introduction to LGBTQ Studies
WS 4913	Independent Study
WS 4993	Honors Thesis

C. Electives

Select 33 semester credit hours of free electives, some of which may need be upper-division, depending on the student's course selections in Section B. Students are advised to consult with their Major Advisor to verify that they will meet the 39 upper-division hours required for the Bachelor's degree in Women's Studies.

Total Credit Hours **78**

B.A. in Women's Studies – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3

Spring

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era	3
POL 1133 or 1213	Texas Politics and Society (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Life & Physical Sciences core		3

Second Year

Fall		
WS 2013	Introduction to Women's Studies	3
Free elective		3
Free elective		3
Language, Philosophy & Culture core		3
Life & Physical Sciences core		3
Spring		
Culture and Society group		3
Free elective		3

Globalization and Borderlands group	3
Social & Behavioral Sciences core	3
Component Area Option core	3

Third Year**Fall**

WS 3613	Feminist Research Methodologies	3
Free elective		3
Subject Group elective		3
Subject Group elective		3
Creative Arts core		3

Spring

WS 4623	Feminist Theories	3
Free elective		3
Subject Group elective		3
Subject Group elective		3
Upper-division free elective		3

Fourth Year**Fall**

WS 4973	Seminar in Women's Studies	3
Free elective		3
Free elective		3
Subject Group elective		3
Subject Group elective		3

Spring

WS 4933	Internship in Women's Studies	3
Free elective		3
Subject Group elective		3
Subject Group elective		3
Upper-division free elective		3

Total Credit Hours: **120.0**

Minor in Women's Studies

All students pursuing a Minor in Women's Studies (WS) are required to complete 18 semester credit hours (6 of which must be upper division 3000-4000).

A. Required Courses

WS 2013	Introduction to Women's Studies	3
WS 4623	Feminist Theories	3

B. Additional coursework

Select four of the following, in at least two disciplines other than the student's major: 12

AMS 3443	Studies in Gender and Sexuality
ANT 3603	Sex, Gender, and Culture
BBL 2023	Latino Cultural Expressions
BBL 3023	Mexican American Culture
BBL 3043	Social Psychological Considerations in Mexican American Communities
BIO 2003	Biology of Human Reproduction
CLA 3123	Cultural Issues in Classical Antiquity
CRJ 4403	Race, Ethnicity, and Criminal Justice
CRJ 4463	Gender and Crime
ENG 3133	Women and Literature

ENG 4393	Feminist Theory of Literature
HIS 3043	History of Women in the United States: Pre-Columbus to 1890
HIS 3053	History of Women in the United States: Since 1890
HIS 3133	Themes in the Social History of the United States
HIS 3963	Women and Gender in India
HTH 4523	Understanding Human Sexuality
IDS 2113	Society and Social Issues
MAS 2013	Introduction to Chicano(a) Studies
POL 3163	Introduction to Feminist Theory
POL 3183	Women in Politics
PSY 3303	Psychological Perspectives on Gender
PSY 4193	Relationships
SOC 3163	Families in Society
SOC 3283	Poverty
SOC 3293	Sociology of Gender
SOC 3413	Sociology of the Mexican American Community
WS 2023	Introduction to LGBTQ Studies
WS 3613	Feminist Research Methodologies
WS 3953	Special Topics in Women Writers
WS 4863	Feminism and Globalization
WS 4913	Independent Study
WS 4933	Internship in Women's Studies
WS 4953	Special Topics in Women's Studies

Total Credit Hours **18**

Note: Please consult the Women's Studies Institute for a complete list of courses that fulfill the WS minor.

To declare a Minor in Women's Studies, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult their academic advisor.

College of Engineering

The College of Engineering offers five Bachelor of Science degree programs in: Biomedical Engineering (BME); Civil Engineering (CE); Computer Engineering (CpE); Electrical Engineering (EE); and Mechanical Engineering (ME). The three programs of CE, EE and ME are accredited by the Engineering Accreditation Commission (EAC) of ABET. The BME and CpE are newly established programs. While the latter are not currently ABET accredited, plans are underway for the accreditation of these programs.

The College has excellent laboratory facilities where students receive hands-on instruction by faculty. Computer-aided design (CAD) facilities, including state-of-the-art workstations, are routinely used in all programs. Some classes are taught by adjunct faculty from local industries, giving students the opportunity to interact with engineering professionals engaged in relevant engineering practice.

This engineering education incorporates demonstrable attributes of ABET-2000 criteria as core values. Graduates from the College of Engineering should have excellent opportunities for employment and pursuit of graduate degrees.

College Honors

The College of Engineering designates certain of its outstanding students as Honors students and provides the opportunity for advanced study under close faculty supervision. Selection for the honors designation is based on the student's academic performance and recommendation by a faculty member in the student's major discipline. To be eligible for the program, students must have a minimum UTSA grade point average of 3.25 and a minimum grade point average of 3.25 in their major at UTSA. These minimum averages must be maintained by the student to receive approval of the College Honors Committee. Students applying for College Honors must enroll in EGR 4993 Honors Research during their final two semesters. The completed research paper must be approved by the supervising faculty sponsor and by at least one of the faculty members in the student's major discipline. Students interested in this program should contact a faculty advisor for additional information.

Admission to the College of Engineering

The admission to any undergraduate program in the College of Engineering at UTSA is based on UTSA's undergraduate admission requirements plus the following additional admission criteria for the College of Engineering. A student is admitted directly into a major only if all College of Engineering admission criteria are met. Students interested in pursuing the Biomedical Engineering major must meet additional requirements. See the Department of Biomedical Engineering section for information on admission to the Biomedical Engineering major.

The following are the requirements for direct admission to the College of Engineering majors including Civil Engineering, Computer Engineering, Electrical Engineering, and Mechanical Engineering:

1. Requirements for direct admission to a College of Engineering major for new freshmen or freshman transfers who have been admitted to the University (freshman transfers are transfer students who have earned fewer than 30 hours):
 - a. Qualify for enrollment in MAT 1214 Calculus I, or higher.
 - b. Meet high school rank in class and standardized test score requirements:

- i Graduated in the top quartile of their high school graduating class, **or**
 - ii Graduated in the second quartile of their high school class and have a combined SAT critical reading and mathematics score of at least 1100 with a minimum mathematics score of 550, or an ACT score of at least 24, with a minimum mathematics score of 22, **or**
 - iii Must be granted admission into a College of Engineering major by holistic review by the College, if not meeting the criteria in i. and ii.
- c. New freshmen and freshman transfers applying for admission to the College of Engineering and not meeting the mathematics requirement in the above criteria (criterion a) will be placed into University College as pre-engineering majors.
 - d. New freshmen and freshman transfers not admitted directly to a College of Engineering major, nor placed into University College as a pre-engineering major, must select a different major at the University.

2. Requirements for direct admission to a College of Engineering major for transfer students who have earned 30 or more hours and have been admitted to the University:
 - a. Completed MAT 1214 Calculus I, or the equivalent with a grade of "C–" or better.
 - b. Meet GPA requirements:
 - i Have a transfer grade point average of at least 2.50 and a grade point average of at least 2.50 in all mathematics, sciences, and engineering coursework, or
 - ii Have a transfer grade point average of at least 2.25 and a grade point average of at least 2.25 in all mathematics, sciences, and engineering coursework, and be granted admission to the College of Engineering major by holistic review by the College.
 - c. Transfer students not admitted directly to a College of Engineering major should select a different major at the University.

After completing 15 credit hours of required courses, including MAT 1214 Calculus I with a grade of "C–" or better, pre-engineering majors who have at least a 2.50 grade point average in each of the Two-Calculation Grade Point Average (see below) should meet with their academic advisor to be classified as a College of Engineering major. Pre-engineering students have a maximum of three semesters from the first semester enrolled to become an engineering major.

Placement as an Engineering Major

Incoming students who meet all admission criteria either directly from high school or with transfer credits will be admitted into one of the following majors: Biomedical Engineering (BME), Civil Engineering (CE), Computer Engineering (CpE), Electrical Engineering (EE), or Mechanical Engineering (ME). All students admitted to engineering majors should follow their major curriculum. If a student cannot meet all the admission criteria for an engineering major, he or she may be admitted as a pre-engineering student in University College.

"C–" Grade Rule

A grade of "D+" or lower in any science or mathematics course required for an engineering degree or any other course that is a prerequisite to a required Biomedical Engineering (BME), Civil Engineering (CE), Electrical Engineering (EE), Mechanical Engineering (ME), or Engineering (EGR)

course indicates unsatisfactory preparation for further engineering education. Any such course in which a grade of “D+,” “D,” “D-,” “F,” or “W” is received must be repeated before enrolling in any course for which it is a prerequisite. This requirement is subject to the three-attempt limit.

Three-Attempt Limit for the College of Engineering

A student unable to achieve the minimum required grade in a required engineering course or in a prerequisite to a required engineering course within three enrollments (attempts) shall be required to change his or her major to a field outside of the College of Engineering. Enrollment in a course for a period of time sufficient for assignment of a grade, including a grade of “W,” is considered an attempt.

Two-Calculation Grade Point Average

The two grade point average calculations employ only the grades received in courses that are applicable to the engineering degree being sought. The grade point averages used in the two-calculation grade point average (GPA) are:

- overall grade point average of all courses (Overall GPA),
- grade point average of all mathematics, science, and engineering courses.

Cooperative Education in Engineering Program

The Cooperative Education in Engineering Program formally integrates University studies with institutionally supervised work experiences at cooperating organizations. Students participating in this program alternate periods of study at the University with periods of employment in industry. This combination of experiences enhances the student’s knowledge, personal development, and preparation for a professional career. Participants register at the University each semester. During the work periods, students register for the 1-semester-credit-hour Engineering Co-op course. At the end of each work period, students submit reports covering the period. These reports are the basis of the student’s grades in the course. The cooperative education work periods also provide students with a source of income to help pay for their college expenses.

Students may petition to apply 3 semester credit hours of Engineering Co-op as a technical elective toward their degree in engineering. They must petition prior to co-op activities.

To qualify for the Cooperative Education in Engineering Program, a student must: have declared a major in the College of Engineering; have completed at least 36 semester credit hours of major and support work, including 7 hours of college-level calculus and 8 hours of college-level physics; and have a minimum cumulative grade point average of 2.50 and a minimum grade point average of 2.50 in their College of Engineering courses. Students are advised that many co-op employers require cumulative grade point averages higher than 2.50, and some require a minimum cumulative grade point average of 3.0. Transfer students may participate in the program after completing at least one semester at the University.

For more information and to apply to the Cooperative Education in Engineering Program, students should contact their academic advisor.

Degree Requirements Common to All Engineering Programs

During their first semester, students should specify their interest in a specific engineering program by selecting biomedical, civil, computer, electrical, or mechanical engineering as a major. Undecided engineering students should select a major closest to their area of interest (refer to the following program descriptions). Students may obtain additional information about each program from their academic advisor or a faculty advisor in the appropriate department.

Prerequisites for Biomedical Engineering (BME), Civil Engineering (CE), Computer Engineering (CpE), Electrical Engineering (EE), Mechanical Engineering (ME), and Engineering (EGR) courses must be completed with a grade of “C-” or better. A minimum grade of “C-” is required for all science and mathematics courses required in the Engineering programs. Students must satisfy the University’s Core Curriculum and ABET accreditation requirements. Recommended degree plans and current ABET requirements may be obtained from the College of Engineering.

All students admitted to the College of Engineering must complete at least 42 semester credit hours from their required major courses at UTSA before graduation.

Course requirements common to all engineering degree programs follow.

I. Core Curriculum requirements

Students seeking the Bachelor of Science degree in any engineering field must fulfill University Core Curriculum requirements in the same manner as other students at UTSA.

MAT 1214 Calculus I, PHY 1943 Physics for Scientists and Engineers I, and PHY 1963 Physics for Scientists and Engineers II (also listed under section II, General Engineering requirements) may be used to satisfy the Core Curriculum requirements for Mathematics and Life and Physical Sciences.

II. General Engineering requirements

All degree-seeking candidates in engineering must complete the following:

CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Certificate in Data Center Design

The certificate program in Data Center Design is designed so that students in mechanical, civil, and electrical engineering disciplines will take all the required courses in their disciplines, then, take additional courses from other majors (options A, B and C shown below). For instance, in order to be certified, a mechanical engineering student not only has to satisfy the mechanical engineering degree requirements, but

also needs to complete courses in option A, shown below. All students must satisfy the prerequisites for courses in the option before registering for courses. Regardless of the option, all participating students must complete a 3 semester credit hour data center design project. The following exhibits the description of the project:

EGR 4953 Special Studies in Engineering: Overview of Data Center Design and Operation

The goal of this course is to provide the student with a broad overview of the application of technical course material and to utilize that knowledge in completion of an approved data center project. The scope of the project encompasses all of the requisite phases in planning for a system deployment into a data center. The phases are: planning, requirement analysis, facility design and installation, system deployment, check out and transitioning to operations. Students should propose the projects, an advisor will be assigned (either from UTSA or industry), and the project will be evaluated as the principal element of the student's grade. Additionally, the course will include field trips to data centers, and guest lecturers to be provided. Some examples of the lecture topics include: Information Technology set up considerations, PSC management and systems monitoring, fire protection/detection at room and cabinet level, future power projections for servers and high performance computers, future cooling applications, physical security measures, etc. Successful course completion includes completing a class project and project presentation.

Option A. Mechanical Engineering Students

Requires 15 semester credit hours in addition to the Bachelor of Science in Mechanical Engineering degree requirements. Mechanical Engineering students pursuing a certificate in Data Center Design must complete the following courses:

CE 3113	Structural Analysis	3
CE 3213	Reinforced Concrete Design	3
EE 3413	Analysis and Design of Control Systems	3
EE 4953	Special Studies in Electrical and Computer Engineering (Power Electronics)	3
EGR 4953	Special Studies in Engineering (Overview of Data Center Design and Operation)	3
Total Credit Hours		15

Option B. Civil Engineering Students

Requires 21 semester credit hours in addition to the Bachelor of Science of Civil Engineering degree requirements. Civil Engineering students pursuing a certificate in Data Center Design must complete the following courses:

EE 2213	Electric Circuits and Electronics	3
EE 3413	Analysis and Design of Control Systems	3
EE 4953	Special Studies in Electrical and Computer Engineering (Power Electronics)	3
EGR 4953	Special Studies in Engineering (Overview of Data Center Design and Operation)	3
ME 3293	Thermodynamics I	3
ME 4293	Thermodynamics II	3
ME 4313	Heat Transfer	3
Total Credit Hours		21

Option C. Electrical Engineering Students

Requires 18 semester credit hours in addition to the Bachelor of Science in Electrical Engineering degree requirements. Electrical Engineering students pursuing a certificate in Data Center Design must complete the following courses:

EE 4953	Special Studies in Electrical and Computer Engineering (Power Electronics)	3
EGR 4953	Special Studies in Engineering (Overview of Data Center Design and Operation)	3
ME 3293	Thermodynamics I	3
ME 3663	Fluid Mechanics	3
ME 4293	Thermodynamics II	3
ME 4313	Heat Transfer	3
Total Credit Hours		18

Department of Biomedical Engineering

The Department of Biomedical Engineering offers a Bachelor of Science degree in Biomedical Engineering.

Bachelor of Science Degree in Biomedical Engineering

A Bachelor of Science (B.S.) degree in Biomedical Engineering (BME) at UTSA is an interdisciplinary program that combines engineering principles, approaches, and methodologies with biological, chemical and physical sciences in order to define and solve problems in medicine. Students will be trained in the fundamentals of science and engineering and are expected to be able to apply this knowledge to investigate fundamental biomedical engineering questions associated with complex living systems as well as with the diagnosis and treatment of human diseases. A broad understanding of sciences and engineering principles is provided in the first two years of the program, with students having the option to choose one concentration as in-depth focus areas of study in the last two years of the program. Critical thinking and innovative design skills are integrated throughout the program to aid students in developing solutions and in solving biomedical engineering-related problems. Design projects throughout the program and Senior BME Design courses provide students the opportunity to integrate their design, critical thinking and communication skills with the scientific and engineering knowledge they acquired throughout the Biomedical Engineering program. The regulations for this degree comply with the general University regulations (refer to Bachelor's Degree Regulations (p. 6)).

Admission Requirements

A first-time, full-time freshman admitted as a biomedical engineering major must meet the minimum admission criteria of the College of Engineering. These criteria are:

- Students must meet all UTSA admission requirements;
- Students must have credit for MAT 1214 Calculus I or have completed all necessary prerequisites to enroll in MAT 1214 Calculus I (through a mathematics placement test or credit for MAT 1093 Precalculus or an equivalent).
- Students must:

1. have graduated in the top quartile of their high school graduation class, or
2. have graduated in the second quartile of their high school class and have a combined SAT critical reading and mathematics score of at least 1100 with a minimum mathematics score of 550, or an ACT composite score of at least 24, or,
3. be granted admission into a College of Engineering major by holistic review by the College of Engineering if not meeting the criteria in 1 and 2 above.

All students applying for admission to the Biomedical Engineering program must submit the following supplemental documents to the Department of Biomedical Engineering:

- two (2) letters of recommendation,
- a copy of the transcript, and
- a statement of their interests, professional career goals and how the Biomedical Engineering program will help achieve those goals.

All transfer students must meet the aforementioned minimum admission requirements for the College of Engineering and the Biomedical Engineering program. Transfer students must also meet the minimum Good Academic Standing Requirements for a Biomedical Engineering Major (see below) in order to be considered for admission to the Biomedical Engineering program. Additionally, transfer students should also have completed at least 15 semester credit hours of mathematics, science, or engineering courses, and have an overall grade point average of a 3.0 or better.

Admissions to the biomedical engineering program will be competitive; meeting the aforementioned requirements does not guarantee admission to the program. Admission will be restricted only to the most qualified applicants.

Good Academic Standing Requirements for a Biomedical Engineering Major

All students must be in good academic standing in order to remain in the Biomedical Engineering program. The minimum requirements that a student must satisfy in order to remain in good standing as a biomedical engineering major are stated below:

- A cumulative grade point average (GPA) of at least 3.0 for all coursework (cumulative GPA will be calculated on all courses, including previously attempted or repeated courses).
- An average GPA of at least 3.0 for all science, mathematics and engineering coursework (GPA will be calculated on all courses, including previously attempted or repeated courses).

Students who fail to meet the above requirements but have a minimum cumulative GPA of 2.5 or above will be placed on programmatic probation in the following semester. Students who fail to maintain good academic standing after a semester of programmatic probation or who have a cumulative GPA below 2.5 will be deemed to be not in good academic standing as a biomedical engineering major and will be removed from the program.

Education Objectives

The objectives of this program are founded on the belief that engineering principles and understanding of biological and physical sciences are critical to the investigation of fundamental bioengineering questions associated with complex living systems as well as with the diagnosis and treatment of human diseases. As such, the program educational

objectives of the graduates from the UTSA Biomedical Engineering program will be able to:

- contribute positively in the biomedical industries and/or other sectors such as hospitals, government agencies, and academia;
- enhance competence in biomedical engineering by pursuing an advanced or a professional degree; and
- work successfully as a member in a team environment to facilitate biomedical engineering practice.

The minimum number of semester credit hours required for this degree is 125, at least 39 of which must be at the upper-division level. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the degree requirements, listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Biomedical Engineering must fulfill the University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for the degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering Requirements. BIO 1404 and PHY 1943 may be used to satisfy the core requirement in Life and Physical Sciences, as well as one of the General Engineering Requirements.

Core Curriculum Component Area Requirements (p. 7)

General Engineering Requirements

All degree-seeking candidates in engineering must complete the following 22 semester credit hours, as well as the Core Curriculum requirements and major requirements:

CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

Total Credit Hours

22

Gateway Course

Students pursuing the Bachelor of Science degree in Biomedical Engineering must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this courses within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EGR 2323 Applied Engineering Analysis I

Biomedical Engineering Requirements

A. Core Biomedical Engineering Requirements

All students majoring in Biomedical Engineering are required to complete 36 semester credit hours in the following Core Biomedical Engineering courses.

BME 1002	Introduction to Biomedical Engineering	2
BME 2103	Physiology for Biomedical Engineering	3
BME 2203	Biomechanics I	3
BME 3003	Biomaterials I	3
BME 3013	Clinical Internship in Biomedical Engineering	3
BME 3022	Biomedical Engineering Technology and Product Development	2
BME 3114	Cellular Biology for Biomedical Engineering	4
BME 3211	Biomedical Engineering Laboratory I	1
BME 3303	Bioinstrumentation	3
BME 3311	Biomedical Engineering Laboratory II	1
BME 3703	Biotransport Phenomena	3
BME 3711	Biomedical Engineering Laboratory III	1
BME 4903	Senior BME Design I	3
BME 4913	Senior BME Design II	3

B. Other Required Courses

All students majoring in Biomedical Engineering are required to complete 6 semester credit hours in the following:

CHE 1113	General Chemistry II	3
STA 1403	Probability and Statistics for the Biosciences	3

C. Biomedical Engineering Electives

A minimum of 15 semester credit hours is required to fulfill this requirement. 9 semester credit hours of Biomedical Engineering elective courses must be selected from one of the following concentrations. The remaining semester credit hours must be selected from other concentrations to satisfy the Biomedical Engineering electives. Up to 6 semester credit hours of graduate-level biomedical engineering courses may be used to satisfy the Biomedical Engineering electives, with the approval of the advisor, instructor, Graduate Program Director, and Department Chair.

Biomechanics Concentration

BME 3033	Biomedical Engineering Internship	15
BME 3043	Biomedical Engineering Research	
BME 3203	Biomechanics II: Cardiovascular	
BME 4203	Biomechanics III	
BME 4293	Topics in Biomechanics	
BME 4703	Biomedical Engineering Thermodynamics	
BME 4803	Fundamental Computational Bioengineering	

Biomaterials, Cellular, and Tissue Engineering Concentration

BME 3033	Biomedical Engineering Internship	
BME 3043	Biomedical Engineering Research	
BME 3403	Biomaterials II	
BME 3413	Biocompatibility of Materials: Tissue-Biomaterial Interaction	
BME 4403	Molecular Techniques for Cell-Biomaterials Interactions	
BME 4423	Tissue Engineering	

BME 4483	Topics in Biomaterials	
BME 4493	Topics in Tissue Engineering	
BME 4713	Cellular Engineering	
BME 4793	Topics in Cellular Engineering	

Biomedical Imaging and Nanobiotechnology Concentration

BME 3033	Biomedical Engineering Internship	
BME 3043	Biomedical Engineering Research	
BME 3503	Nanomaterials and Nanobiotechnology	
BME 4503	Biosensors	
BME 4603	Biophotonics	
BME 4613	Biomedical Imaging	
BME 4623	Biomedical Optics	

D. Technical Electives

A minimum of 9 semester credit hours of Technical Electives must be completed by all students. Depending on interest, students should select appropriate courses in sciences and engineering in order to enhance their basic engineering and scientific training. Examples of Technical Electives are:

Engineering Courses

EE 2213	Electric Circuits and Electronics	9
EE 2423	Network Theory	
EE 3533	Random Signals and Noise	
EGR 2103	Statics	
ME 3293	Thermodynamics I	
ME 3813	Mechanics of Solids	

Science Courses

BIO 1414	Biosciences II	
BIO 2313	Genetics	
BIO 3913	Molecular Biology	
CHE 2603	Organic Chemistry I	
CHE 2612	Organic Chemistry I Laboratory	
CHE 3643	Organic Chemistry II	
CHE 4303	Biochemistry	

Total Credit Hours **65**

B.S. in Biomedical Engineering – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1404	Biosciences I (core and major)	4
CHE 1103	General Chemistry I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

BME 1002	Introduction to Biomedical Engineering	2
CHE 1113	General Chemistry II	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core)	3

PHY 1951	Physics for Scientists and Engineers I Laboratory	1	BME 4913	Senior BME Design II	3
WRC 1023	Freshman Composition II (Q) (core)	3		American History core	3
Second Year				Component Area Option core	3
Fall				Language, Philosophy and Culture core	3
BME 2103	Physiology for Biomedical Engineering	3		Social and Behavioral Sciences core	3
EGR 2103	Statics (Tech Elective)	3	<hr/>		
STA 1403	Probability and Statistics for the Biosciences	3	Total Credit Hours:		
MAT 2214	Calculus III (Tech Elective)	4	125.0		
PHY 1963	Physics for Scientists and Engineers II	3			
PHY 1971	Physics for Scientists and Engineers II Laboratory	1			
Spring					
BME 2203	Biomechanics I	3			
EGR 2323	Applied Engineering Analysis I	3			
BME 3003	Biomaterials I	3			
BME 3114	Cellular Biology for Biomedical Engineering	4			
BME 3211	Biomedical Engineering Laboratory I	1			
Summer					
BME 3013	Clinical Internship in Biomedical Engineering	3			
Third Year					
Fall					
BME 3303	Bioinstrumentation	3			
BME 3311	Biomedical Engineering Laboratory II	1			
POL 1133 or 1213	Texas Politics and Society (core)	3			
	Technical elective	3			
	Upper-division BME elective	3			
Spring					
BME 3022	Biomedical Engineering Technology and Product Development	2			
BME 3703	Biotransport Phenomena	3			
BME 3711	Biomedical Engineering Laboratory III	1			
	Upper-division BME elective	3			
POL 1013	Introduction to American Politics (core)	3			
Summer					
BME 3033	Biomedical Engineering Internship (BME Elective)	3			
Fourth Year					
Fall					
BME 4903	Senior BME Design I	3			
	Upper-division BME elective	3			
	Upper-division BME elective	3			
	American History core	3			
	Creative Arts core	3			
Spring					

Department of Civil and Environmental Engineering

The Department of Civil Engineering offers a Bachelor of Science degree in Civil Engineering.

Bachelor of Science Degree in Civil Engineering

The Department of Civil and Environmental Engineering offers an ABET-accredited bachelor's degree that, in terms of graduating class size, ranks in the 80th percentile nation-wide. The Department is committed to providing a learning environment which encourages discovery and advancement for the betterment of its students and the community. Through its research, public service, and instructional programs, the Department seeks to serve the needs of San Antonio and South Texas by providing educational and research opportunities contributing to the technological and economic development of the region.

Civil Engineering Educational Objectives

The American Society of Civil Engineers (ASCE) defines Civil Engineering as "The profession in which a knowledge of the mathematical and physical sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the progressive well-being of humanity in creating, improving, and protecting the environment; in providing facilities for community living, industry, and transportation; and in providing structures for the use of humanity."

The faculty of the Department of Civil and Environmental Engineering has established a specific set of program objectives to support the mission and the goals of the Department and to meet the requirements of ABET accreditation under the Criteria for Accrediting Engineering Programs (2009). The educational objectives of the Civil Engineering undergraduate program are to produce Bachelor of Science graduates who:

- meet the expectations of their employers,
- will endeavor to become licensed professional engineers, and
- are able to pursue graduate studies, if so desired.

The minimum number of semester credit hours required for the Bachelor in Civil Engineering is 128, including at least 39 at the upper-division level. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the Civil Engineering degree requirements prior to graduation. Each is explained next in detail.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Civil Engineering must fulfill the University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for the degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

General Engineering Requirements

In addition to the Core Curriculum requirements, all degree-seeking Civil Engineering students must complete the following 25 semester credit hours:

CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
EGR 3713	Engineering Economic Analysis	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		25

Gateway Courses

Students pursuing the Bachelor of Science degree in Civil Engineering must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CE 3213	Reinforced Concrete Design
CE 3233	Steel Design
EGR 2323	Applied Engineering Analysis I
MAT 1214	Calculus I

Civil Engineering Degree Requirements

In addition to Core Curriculum and General Engineering requirements, students seeking a Bachelor degree in Civil Engineering are required to take 70 semester credit hours of Civil Engineering courses. Of these 70 credit hours, 64 are from required courses, while the remaining 6 can be satisfied from CE elective courses.

A. Required courses

CE 1301	Introduction to Civil Engineering	1
CE 2103	Civil Engineering Measurements	3
CE 2633	Environmental Engineering	3
CE 3103	Mechanics of Solids	3
CE 3113	Structural Analysis	3

CE 3173	Numerical Methods	3
CE 3213	Reinforced Concrete Design	3
CE 3233	Steel Design	3
CE 3243	Properties and Behavior of Engineering Materials	3
CE 3413	Geotechnical Engineering and Applications	3
CE 3603	Fluid Mechanics	3
CE 4123	Highway Engineering	3
CE 4313	Computer-Aided Design in Civil Engineering	3
CE 4543	Project Design and Construction Management	3
CE 4603	Water Resources Engineering	3
CE 4633	Water and Wastewater Treatment	3
CE 4813	Civil Engineering Design	3
EGR 1403	Technical Communication	3
EGR 2103	Statics	3
EGR 2513	Dynamics	3
GEO 4023	Engineering Geology	3
STA 2303	Applied Probability and Statistics for Engineers	3

B. Civil Engineering technical electives

Select two of the following. Alternatively, students with a grade point average of 3.0 or higher may choose to satisfy this requirement by taking graduate courses offered by the Department of Civil and Environmental Engineering (Department Chair approval required).

CE 4013	Civil Engineering Systems Analysis	
CE 4103	Advanced Steel Design	
CE 4133	Advanced Reinforced Concrete	
CE 4153	Prestressed Concrete	
CE 4253	Introduction to Masonry and Timber Design	
CE 4293	Geographic Information Systems (GIS)	
CE 4303	Hydrometeorology	
CE 4403	Advanced Characterization of Highway Materials	
CE 4453	Transportation Engineering	
CE 4463	Foundation Engineering	
CE 4613	Environmental Chemistry	
CE 4723	Hydraulic Systems Design	
CE 4733	Applied Hydrology	
Total Credit Hours		70

The elective courses allow some specialization in one of the traditional Civil Engineering areas, namely, Environmental, Geotechnical, Hydraulics, Structures and Transportation. Senior Civil Engineering students, in their last semester of study, are required to take the Fundamentals of Engineering (FE) Examination as administered by the National Council of Examiners for Engineering and Surveying (<http://ncees.org>). Graduates are expected to pursue life-long learning and obtain their Professional Engineering license.

This curriculum is designed to meet the student learning outcomes defined by the Accreditation Board of Engineering and Technology and the American Society of Civil Engineers. More specifically, it integrates design throughout the curriculum starting with the freshman introductory course, CE 1301 Introduction to Civil Engineering, and ending with the senior capstone Civil Engineering Design course CE 4813. Design components are contained in most required Civil Engineering courses, such as CE 3213 Reinforced Concrete Design, CE 3233 Steel Design, CE 3413 Geotechnical Engineering and Applications, CE 4633 Water and Wastewater Treatment, CE 4123 Highway Engineering, and CE 4603

Water Resources Engineering. Design elements are also included in many technical elective courses. The design experience culminates in the senior capstone design course, CE 4813 Civil Engineering Design. In this course, students work in multidisciplinary teams involving three or more civil engineering areas and solve practical civil engineering problems drawing upon most of their prior coursework experience. These projects culminate in formal presentations evaluated by professional engineers.

The following provides a summary table of the recommended courses by semester for the Bachelor degree in Civil Engineering.

B.S. in Civil Engineering – Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CE 1301	Introduction to Civil Engineering	1
CE 2103	Civil Engineering Measurements	3
CHE 1103	General Chemistry I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
CS 1173	Data Analysis and Visualization using MATLAB (core)	3
EGR 1403	Technical Communication	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3

Second Year

Fall		
EGR 2103	Statics	3
EGR 2323	Applied Engineering Analysis I	3
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
STA 2303	Applied Probability and Statistics for Engineers	3
American History core		3
Spring		
CE 2633	Environmental Engineering	3
CE 3103	Mechanics of Solids	3
CE 3173	Numerical Methods	3
ECO 2013 or 2023	Introductory Macroeconomics (core)	3
EGR 2513	Dynamics	3
Language, Philosophy & Culture core		3

Third Year

Fall		
CE 3113	Structural Analysis	3
CE 3233	Steel Design	3

CE 3243	Properties and Behavior of Engineering Materials	3
CE 3603	Fluid Mechanics	3
EGR 3713	Engineering Economic Analysis	3
American History core		3
Spring		
CE 3213	Reinforced Concrete Design	3
CE 3413	Geotechnical Engineering and Applications	3
CE 4633	Water and Wastewater Treatment	3
GEO 4023	Engineering Geology	3
POL 1013	Introduction to American Politics (core)	3

Fourth Year

Fall		
CE 4123	Highway Engineering	3
CE 4313	Computer-Aided Design in Civil Engineering	3
CE 4543	Project Design and Construction Management	3
CE 4603	Water Resources Engineering	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Spring		
CE 4813	Civil Engineering Design	3
CE Technical elective		3
CE Technical elective		3
Creative Arts core		3
Students must take FE exam during this semester		

Total Credit Hours: 128.0

Department of Electrical and Computer Engineering

The Department of Electrical and Computer Engineering (ECE) offers a Bachelor of Science degree in Electrical Engineering (B.S. EE) and a Bachelor of Science degree in Computer Engineering (B.S. CpE). Individuals enrolled in these degree programs are given opportunities to develop a strong background in the engineering sciences and to learn the analysis, design, and synthesis tools necessary to function successfully as active participants in traditional, new, and emerging areas of electrical and computer engineering related technologies. The ECE department continues to be recognized locally and nationally for the quality of its undergraduate programs. As a result, ECE graduates continue to find high-paying jobs or are accepted into graduate schools nationwide.

Program Educational Objectives

The educational objectives of the Electrical Engineering program are that our graduates will:

1. contribute their technical knowledge to better their lives,
2. assume positions of leadership and responsibility in their careers,
3. pursue graduate and professional studies, and
4. conduct themselves in a professional manner that meets or exceeds the expectations of their employers.

The educational objectives of the Computer Engineering program are that our graduates will:

1. engage in life-long learning, remaining current and becoming leaders in their profession.
2. advance and expand in their computer engineering related careers by applying their engineering knowledge and skills.
3. contribute productively to the workforce in state, regional, national and international industries and government organizations.
4. communicate effectively, provide enabling solutions to societal challenges, and respond to technical, business, social, ethical, and human needs of the society through their professional endeavors.

Meeting Program Objectives

To meet the program objectives, the curriculum for the Bachelor of Science degree in Electrical Engineering and the curriculum for the Bachelor of Science degree in Computer Engineering are organized into a flexible 126-semester-credit-hour structure that provides high-quality education in the fundamentals of engineering, in addition to a thorough coverage of the major specialties within electrical engineering and computer engineering. For electrical engineering students, a selection of technical electives is provided to allow in-depth concentration in selected areas such as: communication; computer; digital signal processing (DSP); electronic materials and devices; systems and control; and electric power engineering. For students seeking the Bachelor of Science degree in Computer Engineering, the selection of technical electives are from areas of digital system design, computer architecture, VLSI design, engineering programming languages and embedded systems.

Department faculty of outstanding quality work in concert to provide the two degree programs that are challenging to students, with depth in engineering sciences, design orientation, and modern laboratory experience. The program objectives are accomplished via a three-tiered curriculum structure comprised of the lower-division core (the first two years), the upper-division core (concentrated primarily in the third year), and the senior-level electives, each of which are briefly described below.

Lower-Division Core

The lower-division core provides students with a diverse range of courses over a broad base of basic technical and specialized courses in mathematics, physics, and chemistry; computer hardware and software fundamentals; electric circuit fundamentals and electrical engineering laboratory experience; statics and dynamics; and communication skills, humanities, and social sciences.

Upper-Division Core

The upper-division core for electrical engineering and computer engineering provides students with a basic education in the fundamentals of electrical and computer engineering.

The upper-division core in electrical engineering includes: fundamentals of circuits (3 semester credit hours), controls (3 semester credit hours), electromagnetics (3 semester credit hours), electronics (6 semester credit hours), electronic devices (3 semester credit hours), and probability and random processes (3 semester credit hours). Many of these fundamental courses include the use of modern software tools for design and analysis. These fundamentals are supplemented with one hands-on laboratory course (3 semester credit hours). Written and technical communication is further emphasized in the laboratory course.

The upper-division core in computer engineering includes: fundamentals of circuits (3 semester credit hours), C++ and data structures (3 semester credit hours), microcomputer systems (3 semester credit hours), electronics (6 semester credit hours), electronic devices (3 semester credit hours), and probability and random processes (3 semester credit hours). Many of these fundamental courses include the use of modern software tools for design and analysis. These fundamental courses are supplemented with one hands-on laboratory course (3 semester credit hours). Written and technical communication is further emphasized in the laboratory course.

Senior-Level Electives

In the senior year, electrical engineering students enroll in five technical electives (15 semester credit hours), a senior laboratory course (3 semester credit hours), and the capstone design sequence (4 semester credit hours). Students in the technical elective courses have ample opportunities to learn and use modern software tools. The capstone sequence not only provides a major design experience but also emphasizes teamwork, proposal development, communication skills, and professional and ethical responsibility. Electrical engineering students are required to choose one of the six technical areas and to select a minimum of three technical electives (9 semester credit hours) from the chosen area. The remaining two technical electives (6 semester credit hours) may be selected either from the same area or from the other five areas, including one course at the graduate level and/or 3 semester credit hours from an engineering cooperative program. Computer engineering students are required to choose five technical electives from a list of approved technical electives for Bachelor of Science in Computer Engineering. The engineering cooperative program provides an opportunity for students to obtain practical experience by enrolling in three semesters (1 semester credit hour each semester) and working in an approved industry. Students who want to pursue graduate studies are encouraged to enroll in a graduate class during their last year, which will be counted as one of the remaining technical electives.

Engineering Design Experience

Design process in electrical engineering and in computer engineering is emphasized throughout all four years. Engineering design is distributed throughout the programs starting from the second semester in EE 2513 Logic Design. During their junior and senior years, students take five technical elective courses which all have design components. During the seventh semester, students also take EE 4113 Electrical and Computer Engineering Laboratory II, where they must design complex circuits. Modern software tools usage, design and analysis, and formal written report writing are integrated components of several of the electrical and computer engineering courses. EE 3113 Electrical and Computer Engineering Laboratory I and EE 4113 Electrical and Computer Engineering Laboratory II emphasize hands-on experiments using basic to advanced capability instruments and formal written, as well as oral, reports. In EE 4811 Electrical and Computer Engineering Design I EE 4811 Electrical Engineering Design I and CPE 4811 Computer Engineering Design I and EE 4813 Electrical and Computer Engineering Design II EE 4813 Electrical Engineering Design II and CPE 4813 Computer Engineering Design II students are required to design, implement, test, demonstrate and make an oral presentation on an electronic or computer system.

Other courses with design emphasis that electrical engineering students take include: EE 3213 Electromagnetic Engineering, EE 3323 Electronic Devices, EE 3413 Analysis and Design of Control Systems, EE 3463

Microcomputer Systems I, EE 4313 Electronic Circuits II, and EE 4323 Dielectric and Optoelectronic Engineering Laboratory.

Other courses with design emphasis that computer engineering students take include: EE 3313 Electronic Circuits I, EE 3323 Electronic Devices, EE 3463 Microcomputer Systems I, EE 3563 Digital Systems Design and EE 4513 Introduction to VLSI Design.

- Bachelor of Science Degree in Electrical Engineering (p. 121)
- Bachelor of Science Degree in Computer Engineering (p. 123)
- Integrated Bachelor of Science/Master of Science Program (p. 124)

Bachelor of Science Degree in Electrical Engineering

The Bachelor of Science degree in Electrical Engineering has concentrations in Communications; Computer Engineering; Digital Signal Processing (DSP); Electronic Materials and Devices; Systems and Control; and Electric Power Engineering. The program is accredited by the Engineering Accreditation Commission (EAC) of ABET. The Bachelor of Science degree in Electrical Engineering offers students the opportunity to prepare for careers in areas associated with electronics and microelectronics, digital systems, communications, digital signal and image processing, controls and robotics, computer-aided design (CAD), instrumentation, bioengineering, electric power engineering, and other traditional and emerging technology areas. Through the proper selection of elective courses (at least three technical elective courses must be selected from a single technical area) to augment required courses, successful students will develop a specialization pertinent to many of these areas that may lead to productive employment in the public or private sector with electronics companies, high-technology industries, and government agencies. The program will also provide the opportunity for students to develop an understanding of fundamentals and current issues important for future years of learning through such activities as graduate school, distance education, professional training, and membership in professional societies.

The minimum number of semester credit hours required for this degree is 126, at least 39 of which must be at the upper-division level. At least 42 of the required electrical engineering credits must be taken at UTSA. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the Electrical Engineering requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Electrical Engineering must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages below.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences, as well as two of the General Engineering requirements.

Core Curriculum Component Area Requirements (p. 7)

General Engineering Requirements

All degree-seeking candidates in engineering must complete the following 22 semester credit hours, as well as the Core Curriculum requirements and major requirements:

CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Gateway Courses

Students pursuing the Bachelor of Science degree in Electrical Engineering must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EE 1322	Introduction to Electrical and Computer Engineering
EGR 2323	Applied Engineering Analysis I
MAT 1214	Calculus I

Electrical Engineering Degree Requirements

All degree-seeking candidates in Electrical Engineering must complete the following semester credit hours, as well as the Core Curriculum requirements and General Engineering requirements:

A. Required Courses

1. Electrical Engineering courses		
EE 1322	Introduction to Electrical and Computer Engineering	2
EE 2423	Network Theory	3
EE 2511	Logic Design Laboratory	1
EE 2513	Logic Design	3
EE 3113	Electrical and Computer Engineering Laboratory I	3
EE 3213	Electromagnetic Engineering	3
EE 3313	Electronic Circuits I	3
EE 3323	Electronic Devices	3
EE 3413	Analysis and Design of Control Systems	3
EE 3424	Mathematics in Signals and Systems	4
EE 3463	Microcomputer Systems I	3
EE 3523	Discrete Signals and Systems	3
EE 4113	Electrical and Computer Engineering Laboratory II	3
EE 4313	Electronic Circuits II	3
EE 4811	Electrical and Computer Engineering Design I	1

EE 4813	Electrical and Computer Engineering Design II	3
EGR 2213	Statics and Dynamics	3
EGR 3323	Applied Engineering Analysis II	3

2. Supporting courses

CS 2073	Computer Programming with Engineering Applications	3
EE 3533	Random Signals and Noise	3
or STA 3533	Probability and Random Processes	

B. Electrical engineering elective courses

Select at least three courses from one of the following concentrations. Topics offered under EE 4953 Special Studies in Electrical Engineering may be approved as technical electives in the relevant concentration. 15

Communication Concentration

EE 4613	Communication Systems	
EE 4653	Digital Communications	
EE 4673	Data Communication and Networks	
EE 4683	Wireless Communications	
EE 4693	Fiber Optic Communications	

Computer Engineering Concentration

EE 3223	C++ and Data Structures	
or CS 3733	Operating Systems	
EE 3563	Digital Systems Design	
EE 4243	Computer Organization and Architecture	
EE 4513	Introduction to VLSI Design	
EE 4553	VLSI Testing	
EE 4583	Microcomputer Systems II	

DSP Concentration

EE 4453	Selected Topics in Digital Signal Processing	
EE 4623	Digital Filtering	
EE 4643	Digital Signal Processing	
EE 4663	Digital Image Processing	

Electronic Materials and Devices Concentration

EE 3513	Electromechanical Systems	
EE 4323	Dielectric and Optoelectronic Engineering Laboratory	
EE 4513	Introduction to VLSI Design	
EE 4523	Introduction to Micro and Nanotechnology	
EE 4543	Advanced Topics in Micro and Nanotechnology	

Systems and Control Concentration

EE 3513	Electromechanical Systems	
EE 4443	Discrete-Time and Computer-Controlled Systems	
EE 4723	Intelligent Robotics	
EE 4733	Intelligent Control	
EE 4743	Embedded Control Systems	

Electric Power Engineering Concentration

EE 3513	Electromechanical Systems	
EE 4123	Power Engineering Laboratory	
EE 4753	Analysis of Power Systems	
EE 4763	Power Electronics	
EE 4773	Electric Drives	

Total Credit Hours 71
B.S. in Electrical Engineering – Recommended Four-Year Academic Plan**First Year**

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103	General Chemistry I	3
EE 1322	Introduction to Electrical and Computer Engineering	2
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
EE 2511	Logic Design Laboratory	1
EE 2513	Logic Design	3
CS 2073	Computer Programming with Engineering Applications	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3

Second Year

Fall		
EE 2423	Network Theory	3
EGR 2213	Statics and Dynamics	3
EGR 2323	Applied Engineering Analysis I	3
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
American History core		3
Spring		
EE 3313	Electronic Circuits I	3
EE 3424	Mathematics in Signals and Systems	4
EE 3463	Microcomputer Systems I	3
EGR 3323	Applied Engineering Analysis II	3
American History core		3

Third Year

Fall		
EE 3113	Electrical and Computer Engineering Laboratory I	3
EE 3323	Electronic Devices	3
EE 3523	Discrete Signals and Systems	3
EE 4313	Electronic Circuits II	3
Language, Philosophy & Culture core		3
Spring		
EE 3213	Electromagnetic Engineering	3
EE 3413	Analysis and Design of Control Systems	3
EE 3533 or STA 3533	Random Signals and Noise	3
EE Technical elective		3

POL 1013	Introduction to American Politics (core)	3
Fourth Year		
Fall		
EE 4113	Electrical and Computer Engineering Laboratory II	3
EE 4811	Electrical and Computer Engineering Design I	1
EE Technical elective		3
EE Technical elective		3
POL 1133 or 1213	Texas Politics and Society (core)	3
Creative Arts core		3
Spring		
ECO 2023	Introductory Microeconomics (core)	3
EE 4813	Electrical and Computer Engineering Design II	3
EE Technical elective		3
EE Technical elective		3
Component Area Option core		3
Total Credit Hours:		126.0

Bachelor of Science Degree in Computer Engineering

The Bachelor of Science degree in Computer Engineering gives the students the opportunity to acquire broad engineering skills and knowledge to enable them to design and implement computer and digital systems. The discipline of computer engineering includes topics such as logic design; digital systems design; discrete mathematics; computer organization; embedded systems design requiring assembly programming of microprocessors, high-level programming and interfacing of processors to other circuits; high-level digital design languages (HDL) and Field Programmable Gate Arrays (FPGA's); Very Large Scale Integrated (VLSI) circuit design; and fundamental electrical engineering, mathematics, and science. While the B.S. in CpE is not currently ABET accredited as it is a newly established program in 2010, plans are underway for the accreditation of the program at the earliest opportunity.

The minimum number of semester credit hours required for this degree is 126, at least 39 of which must be at the upper-division level. At least 42 of the required computer engineering credits must be taken at UTSA. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the Computer Engineering requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Computer Engineering must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages below.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life

and Physical Sciences, as well as two of the General Engineering requirements.

Core Curriculum Component Area Requirements (p. 7)

General Engineering Requirements

All degree-seeking candidates in engineering must complete the following 22 semester credit hours, as well as the Core Curriculum requirements and major requirements:

CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Gateway Courses

Students pursuing the Bachelor of Science degree in Computer Engineering must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EE 1322	Introduction to Electrical and Computer Engineering
EE 2513	Logic Design
MAT 1214	Calculus I

Computer Engineering Degree Requirements

All degree-seeking candidates in Computer Engineering must complete the following semester credit hours, as well as the Core Curriculum requirements and General Engineering requirements:

A. Required courses

1. Electrical and Computer engineering courses:		
EE 1322	Introduction to Electrical and Computer Engineering	2
EE 2423	Network Theory	3
EE 2511	Logic Design Laboratory	1
EE 2513	Logic Design	3
EE 3113	Electrical and Computer Engineering Laboratory I	3
EE 3223	C++ and Data Structures	3
EE 3313	Electronic Circuits I	3
EE 3323	Electronic Devices	3
EE 3424	Mathematics in Signals and Systems	4
EE 3463	Microcomputer Systems I	3
EE 3563	Digital Systems Design	3
EE 4113	Electrical and Computer Engineering Laboratory II	3
EE 4243	Computer Organization and Architecture	3

EE 4513	Introduction to VLSI Design	3
CPE 4811	Computer Engineering Design I	1
CPE 4813	Computer Engineering Design II	3
EGR 3323	Applied Engineering Analysis II	3
2. Supporting courses		
CS 2073	Computer Programming with Engineering Applications	3
CS 2233	Discrete Mathematical Structures	3
EE 3533	Random Signals and Noise	3
or STA 3533	Probability and Random Processes	
B. Computer engineering electives		
Select five of the following:		15
CS 3733	Operating Systems	
CS 3773	Software Engineering	
CS 4353	Unix and Network Security	
EE 4553	VLSI Testing	
EE 4563	FPGA-Based System Design	
EE 4583	Microcomputer Systems II	
EE 4593	Embedded System Design	
EE 4643	Digital Signal Processing	
EE 4663	Digital Image Processing	
EE 4953	Special Studies in Electrical and Computer Engineering (Computer Engineering related topics only)	

Total Credit Hours **71**

B.S. in Computer Engineering – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
EE 1322	Introduction to Electrical and Computer Engineering	2
CHE 1103	General Chemistry I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
EE 2511	Logic Design Laboratory	1
EE 2513	Logic Design	3
CS 2073	Computer Programming with Engineering Applications	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3

Second Year

Fall		
CS 2233	Discrete Mathematical Structures	3
EE 2423	Network Theory	3
EGR 2323	Applied Engineering Analysis I	3

PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1

American History core 3

Spring

EE 3313	Electronic Circuits I	3
EE 3424	Mathematics in Signals and Systems	4
EE 3463	Microcomputer Systems I	3
EGR 3323	Applied Engineering Analysis II	3

American History core 3

Third Year

Fall

EE 3113	Electrical and Computer Engineering Laboratory I	3
EE 3223	C++ and Data Structures	3
EE 3323	Electronic Devices	3
EE 3563	Digital Systems Design	3

Language, Philosophy & Culture core 3

Spring

EE 3533 or STA 3533	Random Signals and Noise	3
EE 4243	Computer Organization and Architecture	3
EE 4513	Introduction to VLSI Design	3
POL 1013	Introduction to American Politics (core)	3

Technical elective 3

Fourth Year

Fall

CPE 4811	Computer Engineering Design I	1
EE 4113	Electrical and Computer Engineering Laboratory II	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Technical elective		3
Technical elective		3
Creative Arts core		3

Spring

CPE 4813	Computer Engineering Design II	3
ECO 2023	Introductory Microeconomics (core)	3
Technical elective		3
Technical elective		3
Component Area Option core		3

Total Credit Hours: 126.0

Integrated Bachelor of Science/Master of Science Program

The integrated B.S./M.S. (Bachelor of Science and Master of Science) program administered by the Department of Electrical and Computer Engineering is designed to make possible for highly motivated and qualified B.S. students to obtain both an undergraduate degree and an advanced degree within an accelerated timeline. Through this program,

motivated B.S. students can start working with the faculty advisors on research projects as early as in their senior year.

Program Admission Requirements

Applications to the B.S./M.S. program must be submitted after the completion of 75 but before 90 semester credit hours of coursework, usually when a student is enrolled in his or her junior year or in the sixth semester of the B.S. program.

The B.S./M.S. program applicants must have a minimum of 3.3 for both cumulative and major grade point averages. For qualified applicants, the department will waive the GRE examination requirement. To apply for the program, students need to:

- Apply online under the category of Integrated B.S./M.S. (B.S. in Electrical Engineering, or Computer Engineering, and M.S. in Electrical Engineering, Computer Engineering, or Advanced Materials Engineering); and
- Submit an official UTSA transcript and a Proposed Program of Study with an approval from B.S./M.S. advisors.

Submission of both recommendation letters and a personal statement is optional but highly recommended for consideration of scholarships.

Degree Requirements

B.S. Degree requirement: The current undergraduate degree programs in Electrical Engineering and Computer Engineering require 126 semester credit hours for completion with fifteen of these hours (five, 3-hour courses) as technical electives. Students accepted into the Integrated B.S./M.S. program will be required to complete 117 undergraduate credit hours and 9 graduate credit hours to replace three of the five undergraduate technical elective courses toward the B.S. degree, provided that students pass the corresponding challenge exams for the three undergraduate elective courses. The graduate courses include one of the required core graduate courses and other two technical electives from the same concentration area. Students may enroll in a cross-listed course and take a challenge examination following UTSA's challenge examination procedure (see Footnote 1) to earn undergraduate credits for the graduate course taken. Credits earned by challenging UTSA undergraduate courses by examination apply to Bachelor's degree requirements as though the courses had been completed in the normal manner. Since a grade of "CR" is awarded, such courses are not included in the UTSA grade point average calculation.

A graduate core course taken as an undergraduate must be completed with a grade of "B" or better. If a grade lower than "B" is received, it can be counted as an undergraduate technical elective, but in order to stay in the Integrated B.S./M.S. program, a student must pass one of the graduate core courses with a grade of "B" or better. Undergraduate students not able to satisfy this requirement, or simply wishing to voluntarily withdraw from the Integrated B.S./M.S. program, must use a combination of five undergraduate technical electives and graduate courses to satisfy the original 126-hour regular degree program requirement in order to receive their B.S. degree. Students continuing on in the Integrated B.S./M.S. program will receive their B.S. degrees once they have earned 117 undergraduate credit hours and 9 credit hours of technical elective courses by passing the challenge examinations. The 9 graduate credit hours taken as an undergraduate will be counted toward the M.S. degree requirement.

M.S. Degree requirement: A student enrolled in the Integrated B.S./M.S. program can graduate by completing requirements for a thesis or nonthesis (project) option.

(i) Thesis Option: The students must complete 30 credit hours including 6 hours of thesis work.

(ii) Nonthesis Option: The students must complete 33 credit hours including 3 hours of project work.

B.S./M.S. Classification

Once admitted to the Integrated B.S./M.S. program, students are allowed to take graduate courses as undergraduate students. Students admitted to the Integrated B.S./M.S. program will be reclassified from undergraduate to graduate student status when they have completed 126 semester credit hours of coursework (of any combination of graduate and undergraduate hours) toward their degrees. B.S./M.S. students can receive their B.S. degree upon completion of 126 semester credit hours, including those credited by passing the challenge examinations, at which point the program will certify the student's eligibility to receive the B.S. degree and request the Graduate School to change the student status in the Student Information System.

- 1 Currently the **Challenging a UTSA Course policy** at UTSA applies only to undergraduate courses; thus, this mechanism is valid only if the same graduate course is cross-listed with an undergraduate course or until the procedure is extended to graduate courses.

Department of Mechanical Engineering

The Department of Mechanical Engineering offers a Bachelor of Science degree in Mechanical Engineering (ME). The program is accredited by the Engineering Accreditation Commission (ESC) of ABET. Individuals enrolling in this degree program are given the opportunity to develop a strong background in Engineering Science and to learn the analysis, design, and synthesis tools necessary to contribute in traditional and emerging areas of technology.

The department has excellent laboratory facilities where students receive hands-on instruction from faculty members. Computer-aided design (CAD) facilities, including state-of-the-art workstations, are routinely used. Some classes are taught by adjunct faculty from local industries, giving students the opportunity to interact with engineering professionals engaged in relevant engineering practice.

Because of the broad engineering training in this program, graduates may find employment in nearly all industries, including companies or government agencies associated with aerospace, automotive, energy, petroleum, manufacturing, and research.

Bachelor of Science Degree in Mechanical Engineering

The Bachelor of Science degree in Mechanical Engineering offers students the opportunity to prepare for careers in traditional, new, and emerging technologies related to the practice of Mechanical Engineering, which is a versatile and broadly-based engineering discipline. Mathematics and basic sciences, such as physics and chemistry, form the foundation of mechanical engineering, which requires

an understanding of diverse subject areas, such as solid and fluid mechanics, thermal sciences, mechanical design, structures, material selection, manufacturing processes and systems, mechanical systems and control, and instrumentation.

The six areas of concentration within the Mechanical Engineering program are:

1. General Mechanical Engineering
2. Energy, Thermal and Fluid Systems
3. Manufacturing Engineering and Systems
4. Mechanical Systems and Design
5. Mechanics and Materials
6. Oil and Gas

The Mechanical Engineering curriculum provides education and basic engineering training in all specializations through the required coursework. Students may develop a degree of specialization and depth in one of the concentration areas through the selection of technical elective courses. The design experience is integrated throughout the program. Development of open-ended, problem-solving skills is a part of many mechanical engineering courses. Design projects with formal report writing are included in many courses. In addition, a substantial portion of all technical elective courses is devoted to the design of systems and components. A capstone design sequence at the senior level provides an opportunity to apply and integrate the knowledge gained throughout the curriculum to the development of an instructor-approved project.

The laboratory requirements are designed to provide hands-on experience in basic measurement and instrumentation equipment and the application of classroom theory. Students may receive additional hands-on experiences by selecting technical elective courses with laboratory components.

Opportunities exist for students to participate in research and design projects. All students are eligible to participate in undergraduate research, through the independent study courses. Students also have an opportunity to participate in an approved co-op program and may receive up to 3 semester credit hours for their experience.

Educational Objectives

The program educational objectives of the Bachelor of Science degree in the Mechanical Engineering program are to provide graduates with opportunities to:

1. Have engineering careers in industry or government and/or pursue advanced graduate or professional degrees.
2. Apply their engineering skills to their careers.
3. Continue to advance their knowledge, communication and leadership skills by using technology, continuing education, solving problems, and serving in technical or professional societies.
4. Apply their understanding of societal, environmental, and ethical issues to their professional activities.

Student Outcomes

Graduates of the UTSA Mechanical Engineering Program will demonstrate the following:

1. an ability to apply knowledge of mathematics, science, and engineering

2. an ability to design and conduct experiments, as well as to analyze and interpret data
3. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
4. an ability to function on multidisciplinary teams
5. an ability to identify, formulate, and solve engineering problems
6. an understanding of professional and ethical responsibility
7. an ability to communicate effectively
8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. a recognition of the need for, and an ability to engage in life-long learning
10. a knowledge of contemporary issues
11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
12. an ability to apply principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations) to model, analyze, design, and realize physical systems, components or processes; and work professionally in both thermal and mechanical systems areas.

The minimum number of semester credit hours required for this degree is 128, at least 39 of which must be at the upper-division level. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the degree requirements, listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Mechanical Engineering must fulfill the University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for the degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences, as well as two of the General Engineering requirements. EGR 1403 may be used to satisfy the core requirement in the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

General Engineering Requirements

Students seeking the Bachelor of Science degree in Mechanical Engineering must complete the following 22 semester credit hours:

CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Gateway Courses

Students pursuing the Bachelor of Science degree in Mechanical Engineering must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EGR 2103	Statics
EGR 2323	Applied Engineering Analysis I
EGR 2513	Dynamics

Degree Requirements

Students seeking the Bachelor of Science degree in Mechanical Engineering must complete the following semester credit hours, as well as the Core Curriculum requirements and General Engineering requirements:

A. Required foundation and general mechanical engineering courses:

EE 2213	Electric Circuits and Electronics	3
EGR 2103	Statics	3
EGR 2513	Dynamics	3
EGR 3323	Applied Engineering Analysis II	3
ME 1302	Introduction to Mechanical Engineering	2
ME 1402	Mechanical Engineering Practice and Graphics	2
ME 2173	Numerical Methods	3
ME 3113	Measurements and Instrumentation	3
ME 3244	Materials Engineering and Laboratory	4
ME 3263	Manufacturing Engineering	3
ME 3293	Thermodynamics I	3
ME 3543	Dynamic Systems and Control	3
ME 3663	Fluid Mechanics	3
ME 3813	Mechanics of Solids	3
ME 3823	Machine Element Design I	3
ME 4293	Thermodynamics II	3
ME 4313	Heat Transfer	3
ME 4543	Mechatronics	3
ME 4733	Mechanical Engineering Laboratory	3
ME 4812	Senior Design I	2
ME 4813	Senior Design II	3

B. Mechanical Engineering elective courses

Select 9 semester credit hours of Mechanical Engineering elective courses. Students are encouraged to choose courses from a specific concentration listed below. Students may also select courses to earn a Certificate in Oil/Gas.

Approved mathematics or basic science elective courses:

Concentration: Energy, Thermal and Fluid Systems

ME 4183	Compressible Flow and Propulsion Systems
ME 4323	Thermal Systems Design
ME 4343	Heating, Air Conditioning, and Refrigeration Design
ME 4593	Alternative Energy Sources
ME 4613	Power Plant System Design
ME 4623	Internal Combustion Engines

Concentration: Manufacturing Engineering and Systems

ME 4563	Computer Integrated Manufacturing
ME 4573	Facilities Planning and Design
ME 4583	Enterprise Process Engineering

Concentration: Mechanical Systems and Design

ME 3323	Mechanical Vibration
ME 3513	Mechanism Design
ME 4433	Machine Element Design II
ME 4553	Automotive Vehicle Dynamics
ME 4723	Reliability and Quality Control in Engineering Design
ME 4773	Fundamentals of Robotics

Concentration: Mechanics and Materials

ME 4243	Intermediate Materials Engineering
ME 4603	Finite Element Analysis
ME 4963	Mechanical Engineering Applications to Biomedical Systems

Concentration: Oil and Gas

ME 3323	Mechanical Vibration
ME 4323	Thermal Systems Design
ME 4373	Separation Processes
ME 4643	Pressure Vessel and Piping Design
ME 4653	Oil and Gas Engineering and Reservoir Geomechanics

Concentration: General Mechanical Engineering

Courses selected from any of the previous areas

EGR 4993	Honors Research ¹
ME 4953	Special Studies in Mechanical Engineering ¹

Graduate Courses in Mechanical Engineering ²

C. 3 semester credit hours of approved mathematics or basic science elective courses. A list of acceptable courses is available in Engineering Advising.

Total Credit Hours **73**

¹ With prior approval, these courses may be used as a technical elective.

² Graduate courses require approval. Forms are available from your academic advisor.

B.S. in Mechanical Engineering – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3

CHE 1103	General Chemistry I	3
MAT 1214	Calculus I (core and major)	4
ME 1302	Introduction to Mechanical Engineering	2
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
MAT 1224	Calculus II	4
ME 1402	Mechanical Engineering Practice and Graphics	2
WRC 1023	Freshman Composition II (Q) (core)	3
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
American History core		
Second Year		
Fall		
EGR 2103	Statics	3
EGR 2323	Applied Engineering Analysis I	3
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
EGR 1403	Technical Communication (or other core option)	3
Math/Science Elective		
Spring		
EGR 2513	Dynamics	3
EGR 3323	Applied Engineering Analysis II	3
ME 2173	Numerical Methods	3
ME 3244	Materials Engineering and Laboratory	4
ME 3293	Thermodynamics I	3
Third Year		
Fall		
EE 2213	Electric Circuits and Electronics	3
ME 3543	Dynamic Systems and Control	3
ME 3663	Fluid Mechanics	3
ME 3813	Mechanics of Solids	3
ME 4293	Thermodynamics II	3
Language, Philosophy & Culture core		
Spring		
ME 3113	Measurements and Instrumentation	3
ME 3263	Manufacturing Engineering	3
ME 3823	Machine Element Design I	3
ME 4313	Heat Transfer	3
POL 1013	Introduction to American Politics (core)	3
Creative Arts core		
Fourth Year		
Fall		
ME 4543	Mechatronics	3
ME 4733	Mechanical Engineering Laboratory	3
ME 4812	Senior Design I	2

POL 1133 or 1213	Texas Politics and Society (core)	3
ME Technical elective		
Spring		
ME 4813	Senior Design II	3
ME Technical elective		
ME Technical elective		
American History core		
Social and Behavioral Sciences core		
Total Credit Hours:		128.0

Certificate in Oil/Gas

The Certificate in Oil/Gas is designed to prepare mechanical engineering degree-seeking students and non-degree-seeking students with mechanical engineering background with the fundamental engineering knowledge necessary for successful careers in Oil/Gas Industry. It certifies to employers that students awarded the certificate have completed coursework essential to Oil/Gas industry.

Eligibility requirements:

- Meet the prerequisite courses for the certificate program (refer to course descriptions in the *UTSA Undergraduate Catalog*)

Students pursuing an Oil/Gas certificate must complete 15 semester credit hours as follows:

A. Required courses:

ME 3113	Measurements and Instrumentation ¹	3
ME 3823	Machine Element Design I ¹	3

B. ME Electives. Three courses (9 semester credit hours) selected from the following list:

ME 3323	Mechanical Vibration	
ME 4323	Thermal Systems Design	
ME 4373	Separation Processes	
ME 4643	Pressure Vessel and Piping Design	
ME 4653	Oil and Gas Engineering and Reservoir Geomechanics	

Total Credit Hours	15
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¹ Those students who have transferred equivalent courses for ME 3113 Measurements and Instrumentation and/or ME 3823 Machine Element Design I may complete the certificate program by taking ME elective course listed above.

To earn an Oil/Gas certificate, students must satisfy the following requirements:

1. Complete all the requirements of the certificate program.
2. Receive a grade of "C-" or better in each course used to satisfy the requirements of the certificate program.
3. Achieve at least a 2.5 grade point average (on a 4.0 scale) in all courses used to satisfy the requirements of the certificate program.

Undergraduates who are currently enrolled in the baccalaureate degree program in mechanical engineering or enrolled as non-degree-seeking students and who wish to earn an undergraduate Certificate in Oil/Gas are eligible to seek enrollment in the certificate program. An undergraduate wishing to enroll in the certificate program should contact the Mechanical Engineering Certificate Program Advisor and request

permission to enter into the program. Approval is needed to enter into a certificate program and must be granted by the Certificate Program Advisor and the Dean of the College of Engineering.

Students not currently admitted to UTSA who wish to earn an undergraduate Certificate in Oil/Gas will be required to apply for admission to UTSA as non-degree-seeking, special students at the undergraduate level, and indicate in the application process their desire to pursue the requirements for an undergraduate Oil/Gas certificate program. Applicants will be required to meet University admission requirements for special students at the undergraduate level. After the student is admitted to UTSA as a special undergraduate, the student needs to contact the Certificate Program Advisor and request permission to enter into the certificate program. Approval to enter into a certificate program must be granted by the Certificate Program Advisor and the Dean of the College of Engineering.

Students who are pursuing a certificate as non-degree-seeking students will not be eligible for financial aid or Veterans Administration educational benefits.

Graduate students may enroll in the undergraduate certificate programs, provided they meet the requirements for enrollment in a graduate certificate program.

College of Liberal and Fine Arts

Vision Statement

The College of Liberal and Fine Arts will become an internationally recognized college of liberal and fine arts providing the core intellectual experience that prepares students for their role as responsible citizens in a free society.

Mission Statement

The College of Liberal and Fine Arts will meet the needs of the diverse population of Texas through quality research and creative work, exemplary teaching, and professional contributions to the community.

General Information

The College of Liberal and Fine Arts (COLFA) includes 11 departments in the fine arts, humanities, and social sciences. COLFA is responsible for one-third of all the instruction delivered at the University and serves all University students through the Core Curriculum. In addition, the College offers 19 major degree programs and 28 minors. One-fourth of all UTSA undergraduate degree recipients annually are COLFA majors.

COLFA faculty are among the University's leading researchers, recognized regionally, nationally, and internationally. Faculty and their students play a major role in improving the community through the creation and application of new knowledge in numerous artistic, cultural, business, and public policy settings.

The COLFA Signature Experience

Every undergraduate degree program in the College includes a capstone experience that involves the practical application of liberal and fine arts training in a professional setting. The Signature Experience may be pursued through an organized class assignment, independent study research project, internship, performance, public presentation, or other activity as deemed appropriate to the discipline. Students should consult with their advisor or department chair to learn about Signature Experience opportunities in their major.

- Minor in Film Studies (p. 130)
- Minor in Museum Studies (p. 130)

Minor in Film Studies

The Minor in Film Studies provides a broad, interdisciplinary approach to film analysis and criticism, history of cinema, film production, and the uses of film in the fine arts, humanities, and social science disciplines.

All students pursuing a Minor in Film Studies must complete 18 semester credit hours from among the following courses:

ANT 3803	Media, Power, and Public Culture	3
ANT 4243	Ethnographic Film	3
CSH 2113	The Foreign Film	3
HIS 3803	World History in the Cinema	3
HUM 2053	History of Film	3
HUM 3103	American Film	3
HUM 3203	Film Genres	3

HUM 3303	Major Filmmaker	3
HUM 3403	Literature into Film	3
MES 3113	Film Studies	3
MES 3333	Digital Video Production	3
MES 4333	Digital Video Practicum	3
MUS 2743	Music and Film	3
POL 3743	Politics in Film	3
SOC 3423	Mass Media in Society	3

The following topics courses may also be applied toward the 18-hour requirement when they examine film or cinema:

AHC 4333	Topics in Art History and Criticism	3
AMS 3343	Studies in Race and Ethnicity	3
AMS 4823	Topics in American Culture	3
ART 4033	Studio Art Problems	3
ENG 4613	Topics in Mexican American Literature	3
ENG 4953	Special Studies in English	3
ENG 4973	Seminar for English Majors	3
FRN 4213	Topics in French Culture and Linguistics	3
GER 4213	Topics in German Culture and Linguistics	3
HUM 3703	Topics in Popular Culture	3
HUM 4953	Special Studies in Humanities	3
HUM 4973	Senior Seminar in Humanities	3
RUS 3633	Topics in Russian Culture	3
SPN 4303	Topics in Hispanic Cultures	3

Other courses that include a focus on film or cinema may be proposed as substitutions in satisfying requirements for the Minor.

To declare a Minor in Film Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult their advisor.

Minor in Museum Studies

The Minor in Museum Studies will provide students, through theoretical and practical training in the display and interpretation of exhibited objects, opportunities to develop an interdisciplinary relationship with the arts, material culture, cultural production, cultural history, and natural history. This minor also provides undergraduates with the opportunity to undertake systematic coursework that emphasizes both conceptual and applied approaches in the museum field, coupled with work in language and writing skills.

All students pursuing a Minor in Museum Studies must complete 18 semester credit hours:

Required Courses:

MSM 3003	Fundamentals of Museum Studies	3
MSM 4813	Topics in Museum Science	3
MSM 4933	Museum Internship	3

Students will choose 9 additional semester credit hours from the following courses:

Elective Courses:

AHC 3113	Contemporary Art	3
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AHC 4333	Topics in Art History and Criticism (Histories of Display)	3
ANT 3383	Folklore and Folklife	3
ANT 3413	The Ethnographic Experience	3
ANT 3543	Museum Studies in Anthropology	3
ANT 3713	Anthropology of Material Culture	3
ANT 3803	Media, Power, and Public Culture	3
ART 4833	Internship in the Visual Arts	3
ART 4983	Senior Seminar and Exhibition	3
CLA 3063	Topics in the Art and Architecture of the Classical World	3
CLA 3123	Cultural Issues in Classical Antiquity	3
ENG 4433	Advanced Professional Writing	3
HIS 3493	History of San Antonio	3
HIS 4133	History and the Public	3
MES 3333	Digital Video Production	3
MES 4333	Digital Video Practicum	3
MUS 3103	Audio Technology I	3
MSM 4913	Independent Study in Museum Studies	3
MUS 3163	Audio Technology II	3
NPO 3003	Fundraising in Nonprofit Agencies	3
SOC 4433	Culture and Society	3
SOC 4853	Special Studies in Sociology (Multimedia Applications in Sociology)	3

Department of Anthropology

The Department of Anthropology offers a Bachelor of Arts degree in Anthropology and minors in Anthropology and American Indian Studies. Honors may also be earned in Anthropology.

Department Honors

The Department of Anthropology awards Department Honors to certain of its outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection of students for honors designation is based on the student's academic performance and recommendation by the faculty in the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the discipline faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis courses during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member.

Students interested in this program should contact their faculty advisors for additional information.

Bachelor of Arts Degree in Anthropology

The minimum number of semester credit hours required for this degree, including Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

As part of the College of Liberal and Fine Arts Signature Experience, which seeks to offer students opportunities to apply ideas and knowledge in real-world settings, the Department of Anthropology encourages students to take advantage of internships, independent studies, or service learning as part of their undergraduate program of study. Internships are arranged through the Department Chair and are designed to provide students with experiences at a wide variety of institutions in the region, including the Department's Center for Archaeological Research and the UTSA Institute of Texan Cultures. Independent studies are arranged in consultation with Anthropology faculty and may include research on areas not normally covered by organized coursework, work associated with a professor's research, or a student's independent research project. Service Learning is offered through the UTSA Student Activities Office and focuses on activities designed around civic engagements that address or meet community needs.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Anthropology must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

The following four courses satisfy both degree requirements of the major as well as component requirements of the Core Curriculum. ANT 2033 may be used to help satisfy the Life and Physical Sciences component requirement. ANT 2043 or ANT 2053 will satisfy the Social and Behavioral Sciences component requirement. ANT 2063 may be used to satisfy the Language, Philosophy, and Culture component requirement. ANT 1013 is not a requirement of the major in anthropology; however, it will satisfy the Social and Behavioral Sciences component requirement of the Core Curriculum.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Semester credit hours in the major, 27 of which must be at the upper-division level

1. Required courses:

ANT 2033	Introduction to Biological Anthropology	3
ANT 2043	Introduction to Archaeology	3
ANT 2053	Introduction to Cultural Anthropology	3
ANT 2063	Language, Thought, and Culture	3

2. Upper-division semester credit hours chosen in consultation with the student's advisor:

Archaeology	3
Cultural Anthropology	3
Physical Anthropology	3

3. Additional upper-division semester credit hours of anthropology 18 electives, excluding ANT 4913 Independent Study, chosen in consultation with the student's advisor

B. Electives

39 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of anthropology.

Total Credit Hours **78**

Course Sequence Guide for B.A. Degree in Anthropology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Anthropology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress toward the degree depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Anthropology – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship	3
ANT 2043	Introduction to Archaeology (core and major)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Other core course or free elective		3

Spring

ANT 2033	Introduction to Biological Anthropology (core and major)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Other core course or free elective		3
Mathematics core		3

Second Year

Fall		
ANT 2053	Introduction to Cultural Anthropology	3
POL 1013	Introduction to American Politics (core)	3
Free elective		3
Other core course or free elective		3
Upper-division Archaeology course		3

Spring

ANT 2063	Language, Thought, and Culture	3
ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Other core course or free elective		3

Upper-division Cultural Anthropology course 3

Third Year

Fall

Free elective	3
Upper-division ANT elective	3
Upper-division Physical Anthropology course	3
Upper-division free elective	3
Upper-division support work	3

Spring

Upper-division ANT elective	3
Upper-division ANT elective	3
Free elective	3
Free elective	3
Upper-division support work	3

Fourth Year

Fall

Free elective	3
Free elective	3
Upper-division ANT elective	3
Upper-division ANT elective	3
Upper-division support work	3

Spring

Free elective	3
Free elective	3
Upper-division ANT elective	3
Free elective (to meet 120 hour minimum)	3
Free elective (to meet 120 hour minimum)	3

Total Credit Hours: 120.0

- Minor in Anthropology (p. 132)
- Minor in American Indian Studies (p. 132)

Minor in Anthropology

All students pursuing a Minor in Anthropology must complete 18 semester credit hours.

A. Select 3 of the following: 9

ANT 2033	Introduction to Biological Anthropology	3
ANT 2043	Introduction to Archaeology	3
ANT 2053	Introduction to Cultural Anthropology	3
ANT 2063	Language, Thought, and Culture	3

B. Additional upper-division semester credit hours

Archaeology upper-division course	3
Cultural anthropology upper-division course	3
Physical anthropology upper-division course	3

Total Credit Hours 18

To declare a Minor in Anthropology, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in American Indian Studies

Eighteen (18) semester credit hours are required for the Minor in American Indian Studies, at least 9 semester credit hours of which must

be drawn from outside the student's major. Hours are selected from the following:

AHC 3423	Arts of Ancient America	3
ANT 3153	Indians of the Great Plains	3
ANT 3203	Native North Americans	3
ANT 3253	The Archeology of South America	3
ANT 3263	Archaeology of North America	3
ANT 3273	Civilizations of Mexico	3
ANT 3303	Nature and Culture in Greater Amazonia	3
ANT 3363	Indians of Mesoamerica	3
ANT 3833	Indians of Texas	3
ANT 4113	Archaeology of Texas	3
ANT 4123	Archaeology of the American Southwest	3
HIS 3083	History of the American West	3
HIS 3113	North American Indian Histories	3
HIS 3403	Pre-Hispanic and Colonial Latin America	3

To declare a Minor in American Indian Studies, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Art and Art History

The Department of Art and Art History offers a Bachelor of Arts in Art, a Bachelor of Fine Arts in Art, and a Bachelor of Arts in Art History and Criticism, as well as a Minor in Art History and Criticism. These degree programs subscribe to the College of Liberal and Fine Arts Signature Experience through practical experience achieved in the following courses: ART 4833 Internship in the Visual Arts, ART 4983 Senior Seminar and Exhibition, and AHC 4933 Art Gallery and Museum Internship. UTSA is an accredited institutional member of the National Association of Schools of Art and Design.

- Bachelor of Arts Degree in Art (p. 133)
- Bachelor of Fine Arts Degree in Art (p. 135)
- Bachelor of Arts Degree in Art History and Criticism (p. 136)

Bachelor of Arts Degree in Art

The Bachelor of Arts (B.A.) degree in Art is awarded upon the completion of 120 hours, of which 42 hours are Core Curriculum requirements. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

The B.A. degree in Art recognizes the successful completion of a program of study which includes foundation study, some specialization in studio art practices and a broad foundation in art history. The curriculum aims primarily toward breadth of experience in the context of a liberal arts education rather than professional specialization.

Transfer students who wish to receive credit for upper-division studio art courses taken at another institution must present a portfolio of work to the department before the registration period. This portfolio should consist of at least six original examples or a CD/DVD digital portfolio of artworks completed for each upper-division course taken at another institution for which the student wishes to receive credit.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Art must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

AHC 1113 Survey of Art and Architecture from Prehistoric Times to 1350, AHC 1123 Survey of Art and Architecture in Europe and the New World from 1350 to 1750, or AHC 1133 Survey of Modern Art may be used to satisfy the core requirement in Creative Arts as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Arts degree in Art must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ART 1003	Two Dimensional Foundations
ART 1013	Three Dimensional Foundations

Major Requirements

A. Required lower-division art and art history and criticism foundation courses

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 ¹	3
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
AHC 1133	Survey of Modern Art ¹	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1213	Drawing I ¹	3
ART 1223	Drawing II ¹	3

B. Additional courses

Select three of the following:		9
ART 2113	Painting: Basic	
ART 2223	New Media: Basic	
ART 2313	Photography: Basic	
ART 2413	Printmaking: Basic	
ART 2613	Sculpture: Basic	
ART 2713	Ceramics: Basic	

C. Upper-division art course electives

Select 12 additional semester credit hours of upper-division art course electives. The ART course prefix must precede course numbers for all classes used to fulfill these degree requirements		12
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D. Upper-division art history and criticism course electives

Select 6 semester credit hours of upper-division art history and criticism course electives. The AHC course prefix must precede course numbers for all classes used to fulfill these degree requirements, with the exception that students may substitute a specific course in the philosophy of art or a humanities course with a strong art history component for one (3 semester credit hours) upper-division art history course with consent of the undergraduate advisor for art programs. 6

E. Free Electives

Select 33 semester credit hours of free electives, at least 21 hours of which must be upper-division, including as many semesters of a modern language or Latin as are necessary for the completion of the second semester course of that language. Within the scope of these electives, students may take courses for all-level teacher certification, 24 semester credit hours of professional education courses (including 6 hours of student teaching and 3 hours in a state-mandated reading course): for specific required courses, consult the Interdisciplinary Education Advising and Certification Center. 33

Total Credit Hours 81

¹ A grade of "C–" or better must be earned in these courses to satisfy the prerequisites for subsequent courses in the Art major.

Note: For the B.A. degree in Art, the major grade point average is calculated using only ART and AHC courses.

Course Sequence Guide for B.A. Degree in Art

This course sequence guide is designed to assist students in completing their UTSA undergraduate Art degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Art – Four-Year Academic Plan

First Year

Fall		Credit Hours
AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 (core and major) ¹	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1213	Drawing I ¹	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1223	Drawing II ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Mathematics core		3

Second Year**Fall**

AHC 1133	Survey of Modern Art ¹	3
POL 1013	Introduction to American Politics (core)	3
Foreign Language (semester I)		3-4
Lower-division Studio ART Basic		3
Life & Physical Sciences core		3

Spring

ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Foreign Language (semester II)		3-4
Lower-division Studio ART Basic		3
Life & Physical Sciences core		3

Third Year**Fall**

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
Lower-division Studio ART Basic		3
Upper-division AHC elective		3
Upper-division free elective		3
Component Area Option core		3

Spring

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (, or United States History: Civil War Era to Present, or Texas History)	3
Upper-division AHC elective		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division Studio ART elective		3

Fourth Year**Fall**

Language, Philosophy & Culture core		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division Studio ART elective		3
Upper-division Studio ART elective		3

Spring

Free elective (to meet 120 hour minimum)		1-3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division Studio ART elective		3

Total Credit Hours: 120.0

¹ Must be completed with a grade of "C–" or better.

Bachelor of Fine Arts Degree in Art

The Bachelor of Fine Arts (B.F.A.) degree in Art is awarded in recognition of successful completion of prolonged and intensive studio coursework with supportive studies in art history and criticism. The final two years of study include a specialized area of study in one of the following: ceramics, drawing, new media, painting, photography, printmaking, or sculpture. The University is an accredited institutional member of the National Association of Schools of Art and Design.

Transfer students who wish to receive credit for upper-division studio art courses taken at another institution must present a portfolio of work to the department before the registration period. This portfolio should consist of at least six original examples or a CD/DVD digital portfolio of artworks completed for each upper-division course taken at another institution for which the student wishes to receive credit.

Most students will fulfill the requirements for this degree with 120 semester credit hours, of which 42 hours are Core Curriculum requirements. Due to the large number of major courses in the B.F.A. degree, full-time art students should enroll in two studio art courses, one art history and criticism course, and one or two Core Curriculum courses each semester. Art majors in the B.F.A. program should request an appointment with the undergraduate advisor for art programs before all enrollment periods. In order to complete all B.F.A. degree requirements in a timely fashion, both full-time and part-time art students should register every term for twice as many credits in their major course requirements as in Core Curriculum courses. Students seeking teacher certification should consult the Interdisciplinary Education Advising and Certification Center.

All candidates for the degree must complete 63 semester credit hours of art (ART) and 18 semester credit hours of art history and criticism (AHC).

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Fine Arts degree in Art must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

AHC 1113 Survey of Art and Architecture from Prehistoric Times to 1350, AHC 1123 Survey of Art and Architecture in Europe and the New World from 1350 to 1750, or AHC 1133 Survey of Modern Art may be used to satisfy the core requirement in Creative Arts as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Fine Arts degree in Art must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ART 1003	Two Dimensional Foundations
ART 1013	Three Dimensional Foundations

Major Requirements

A. Specifically required lower-division studio art and art history foundation courses completed as part of the first 60 hours of the curriculum

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 ¹	3
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
AHC 1133	Survey of Modern Art ¹	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1213	Drawing I ¹	3
ART 1223	Drawing II ¹	3
ART 2113	Painting: Basic	3
ART 2223	New Media: Basic	3
ART 2313	Photography: Basic	3
ART 2413	Printmaking: Basic	3
ART 2613	Sculpture: Basic	3
ART 2713	Ceramics: Basic	3

B. Upper-division art courses including

ART 3033	Contemporary Studio: Concepts and Practice	3
ART 4983	Senior Seminar and Exhibition	3
Upper-division art courses in one of the following specialized areas of study: ceramics, drawing, new media, painting, photography, printmaking, or sculpture.		15

C. Upper-division art history and criticism courses

AHC 3113	Contemporary Art	3
Select 6 elective hours of upper-division art history and criticism courses. The AHC course prefix must precede course numbers for all classes used to fulfill these degree requirements with the exception that students may substitute a specific course in the philosophy of art or a humanities course with a strong art history component for one (3 semester credit hours) upper-division art history course with consent of the undergraduate advisor for art programs		6

D. Art courses Electives

Select 12 additional semester credit hours of art course electives, at least 9 hours of which must be upper-division. The ART course prefix must precede course numbers for all classes used to fulfill these degree requirements.		12
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Total Credit Hours

81

Note: For the B.F.A. degree in Art, the major grade point average is calculated using only ART and AHC courses.

Course Sequence Guide for B.F.A. Degree in Art

This course sequence guide is designed to assist students in completing their UTSA undergraduate Art degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course

availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.F.A. in Art – Four-Year Academic Plan

First Year

Fall		Credit Hours
AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 (core and major) ¹	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1213	Drawing I ¹	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1223	Drawing II ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Mathematics core		3

Second Year

Fall		
AHC 1133	Survey of Modern Art ¹	3
ART 2113	Painting: Basic	3
ART 2413	Printmaking: Basic	3
ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
Life & Physical Sciences core		3
Spring		
ART 2223	New Media: Basic	3
ART 2313	Photography: Basic	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
Life & Physical Sciences core		3
Upper-division ART specialization		3

Third Year

Fall		
AHC 3113	Contemporary Art	3
ART 2613	Sculpture: Basic	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
POL 1013	Introduction to American Politics (core)	3
Upper-division ART specialization		3

Spring

ART 2713	Ceramics: Basic	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Upper-division AHC elective		3
Upper-division ART elective		3
Upper-division ART specialization		3

Fourth Year

Fall		
ART 3033	Contemporary Studio: Concepts and Practice	3
Language, Philosophy & Culture core		3
Upper-division AHC elective		3
Upper-division ART elective		3
Upper-division ART specialization		3
Spring		
ART 4983	Senior Seminar and Exhibition	3
ART Elective		3
Upper-division ART Elective		3
Upper-division ART specialization		3
Component Area Option core		3
Total Credit Hours:		120.0

¹ Must be completed with a grade of "C–" or better.

Bachelor of Arts Degree in Art History and Criticism

The Bachelor of Arts degree in Art History and Criticism is awarded upon the completion of 120 hours, of which, 42 hours are Core Curriculum requirements. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

The B.A. in Art History and Criticism program offers art historical studies in the context of a liberal arts education. This degree program emphasizes critical thinking, research and writing skills in order to prepare students for careers in the arts, in a variety of fields requiring a liberal arts background, or pursuing graduate studies in art history and related fields.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Art History and Criticism must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

AHC 1113 Survey of Art and Architecture from Prehistoric Times to 1350, AHC 1123 Survey of Art and Architecture in Europe and the New World from 1350 to 1750, or AHC 1133 Survey of Modern Art may be used to satisfy the core requirement in Creative Arts as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Arts degree in Art History and Criticism must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750
AHC 1133	Survey of Modern Art

Major Requirements

A. Lower-division art history and criticism foundation courses 9

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 ¹
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹
AHC 1133	Survey of Modern Art ¹

B. Upper-division art history and criticism courses 15

AHC 3113	Contemporary Art
AHC 3423	Arts of Ancient America
AHC 3523	Latin American Art
AHC 4333	Topics in Art History and Criticism (may be repeated for credit when topics vary)
AHC 4933	Art Gallery and Museum Internship

C. Lower-division art courses 9

ART 1003	Two Dimensional Foundations
ART 1013	Three Dimensional Foundations
ART 1213	Drawing I

D. Upper-division art history elective courses 6

E. Electives

Select a minimum of 39 semester credit hours of electives, at least 18 of which must be upper-division, and including as many semesters of a single language other than English as are necessary for the completion of the fourth UTSA semester course of that language. 39

Total Credit Hours 78

¹ A grade of "C-" or better must be earned in these courses to satisfy the prerequisites for subsequent courses in the Art History and Criticism major.

Note: For the B.A. degree in Art History and Criticism, the major grade point average is calculated using ART and AHC courses, and the 9 hours of support work.

Course Sequence Guide for B.A. Degree in Art History and Criticism

This course sequence guide is designed to assist students in completing their UTSA undergraduate Art History and Criticism degree requirements. *This is merely a guide and students must satisfy other requirements*

of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Art History and Criticism – Four-Year Academic Plan

First Year

Fall		Credit Hours
AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 (core and major) ¹	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Two Dimensional Foundations	3
ART 1213	Drawing I	3
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
ART 1013	Three Dimensional Foundations	3
WRC 1023	Freshman Composition II (Q) (core)	3
Language (semester I)		3-4
Mathematics core		3

Second Year

Fall

AHC 1133	Survey of Modern Art ¹	3
Language (semester II)		3-4
Language, Philosophy & Culture core		3
Life & Physical Sciences core		3
Elective		3

Spring

ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
POL 1013	Introduction to American Politics (core)	3
Language (semester III)		3
Life & Physical Sciences core		3
Upper-division AHC		3

Third Year

Fall

POL 1133 or 1213	Texas Politics and Society (core)	3
Language (semester IV)		3
Elective		3
Upper-division AHC		3
Component Area Option core		3

Spring

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
Upper-division AHC		3
Upper-division AHC		3
Elective		3
Upper-division elective		3
Fourth Year		
Fall		
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
Upper-division AHC		3
Upper-division AHC		3
Upper-division elective		3
Upper-division elective		3
Spring		
Elective		1-3
Upper-division AHC		3
Upper-division elective		3
Upper-division elective		3
Upper-division elective		3
Total Credit Hours:		120.0

¹ Must be completed with a grade of “C–” or better.

Minor in Art History and Criticism

The discipline of the history of art addresses cultural, historical, and critical issues through the visual arts. A Minor in Art History and Criticism provides students with a general overview of the discipline.

All students pursuing the Minor in Art History and Criticism must complete 18 semester credit hours.

A. Minor requirements

Select two of the following:	6
AHC 1113 Survey of Art and Architecture from Prehistoric Times to 1350	
AHC 1123 Survey of Art and Architecture in Europe and the New World from 1350 to 1750	
AHC 1133 Survey of Modern Art	

B. Additional courses

Select four of the following:	12
AHC 3113 Contemporary Art	
AHC 3423 Arts of Ancient America	
AHC 3523 Latin American Art	
AHC 3523 Latin American Art	
AHC 4333 Topics in Art History and Criticism	
AHC 4933 Art Gallery and Museum Internship	

Total Credit Hours **18**

Department of Communication

The Department of Communication offers a Bachelor of Arts degree and a minor in Communication. Honors may also be earned in Communication. If a student majors in Communication, he or she also may choose to concentrate his or her coursework in either Public Relations or Digital Communication.

Declaration of Major Policy

Before declaring a major in Communication, students must complete the pre-Communication sequence detailed below with a “C–” or better in each course. After satisfactory completion of pre-Communication sequence, students seeking a B.A. in Communication must declare their major by submitting a Declaration of Major form with their academic advisor. Students may not enroll in specified 3000- and 4000-level courses in the Department of Communication before declaring a major.

Direct Admission Criteria

Transfer students who have completed transferable college credit in courses equivalent to the 9-semester-credit-hour pre-Communication sequence with a “C–” or better in each course will be directly admitted to the Communication major.

Department Honors

Students whose grade point average in the communication major (including support work) before the beginning of their final year at UTSA is 3.25 or above, and whose overall grade point average is 3.0, may earn Honors in Communication. In order to do so, a student must complete a substantial paper or project approved by the Department Honors Committee and maintain a 3.25 grade point average in both the major and support work. The grade point average requirements apply to all transfer work and courses at UTSA. In the event that a student does not meet the minimum grade point average requirements, the student may appeal to the Department Honors Committee for special consideration. Appropriate forms and letter(s) of recommendation from UTSA faculty are necessary for such consideration.

- Bachelor of Arts Degree in Communication (p. 138)
- B.A. in Communication with a Public Relations Concentration (p. 140)
- B.A. in Communication with a Digital Communication Concentration (p. 140)

Bachelor of Arts Degree in Communication

The minimum number of semester credit hours required for this degree is 120, including Core Curriculum requirement hours. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level. The College of Liberal and Fine Arts Signature Experience may be fulfilled by successful completion of COM 4533 Public Relations Planning and Campaigns, COM 4723 Digital Media Production II, COM 4813 Theory and Practice of Social Interaction or COM 4933 Internship in Communication.

Pre-Communication Sequence

In order to declare a Communication major, students must first earn a grade of “C–” or better in each course in the pre-Communication

sequence that includes COM 3023 Foundations of Communication, COM 3073 Conduct of Communication Inquiry, and COM 3083 Language and Communication Theory. Each COM course may be taken no more than two (2) times to improve a grade (however, students should refer to the UTSA Information Bulletin for the potential consequences of repeating courses).

Students who declare a concentration in Public Relations or Digital Communication must complete each course required for the concentration with a grade of “C–” or better.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Communication must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

COM 2113 may be used to satisfy a core requirement in the Component Area Option as well as a major requirement.

Note: If a language is used to satisfy the three-hour Language, Philosophy and Culture core requirement, students will need to take an additional three hours in the same language for the degree requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Arts degree in Communication must successfully complete each of the following Gateway Courses with a grade of “C–” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

COM 3023	Foundations of Communication
COM 3073	Conduct of Communication Inquiry
COM 3083	Language and Communication Theory

Degree Requirements

A. Pre-Communication Sequence

COM 3023	Foundations of Communication	3
COM 3073	Conduct of Communication Inquiry	3
COM 3083	Language and Communication Theory	3

B. Communication Core

COM 2113	Public Speaking	3
COM 3553	Intercultural Communication	3
or COM 3563	International Communication	
ENG 2413	Technical Writing	3

C. Single foreign language

Select 6 semester credit hours in a single foreign language	6
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Total Credit Hours	24
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B.A. in Communication (no concentration)

All candidates seeking this degree must fulfill the Core Curriculum requirements, the degree requirements, and the following:

A. Additional Communication courses

Select 21 additional semester credit hours in Communication, at least 15 at the upper-division level

B. Capstone

COM 4813	Theory and Practice of Social Interaction	3
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C. Electives

30 semester credit hours of free electives. In fulfillment of this requirement, majors are encouraged to take coursework in disciplines that support the study of Communication. At least 9 of these elective credit hours must be at the upper-division level.

Total Credit Hours	54
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Course Sequence Guide for B.A. Degree in Communication

This course sequence guide is designed to assist students in completing their UTSA undergraduate Communication degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Communication – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Foreign Language (semester I); core		3-4
Mathematics core		3

Spring

COM 2113	Public Speaking (core and major) ¹	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Foreign Language (semester II)		3-4
Life & Physical Sciences core		3

Second Year

Fall		
COM 3023	Foundations of Communication ¹	3
COM 3083	Language and Communication Theory ¹	3

ENG 2413	Technical Writing ¹	3
POL 1013	Introduction to American Politics (core)	3
Life & Physical Sciences core		
Spring		
COM 3073	Conduct of Communication Inquiry ¹	3
COM 3553 or 3563	Intercultural Communication (or International Communication) ¹	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Free elective		
Social and Behavioral Sciences core		
Third Year		
Fall		
Free elective		
Free elective		
Support work		
Upper-division COM elective		
Upper-division COM elective		
Spring		
Creative Arts core		
Free elective		
Upper-division COM elective		
Upper-division COM elective		
Upper-division support work		
Fourth Year		
Fall		
COM elective		
Free elective		
Support work/Free elective		
Upper-division COM elective		
Upper-division support work		
Spring		
COM 4813	Theory and Practice of Social Interaction	3
COM elective		
Free elective		
Free elective (to meet 120 hour minimum)		
Upper-division support work		
Total Credit Hours:		120.0

¹ Must be completed with a grade of "C-" or better.

B.A. in Communication with a Public Relations Concentration

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements listed above. Additionally, students seeking a Public Relations Concentration must complete COM 3523 Public Relations, COM 3533 Writing for Public Relations, COM 3623 Commercial Publications, COM 4523 Case Studies in Public Relations, and COM 4533 Public Relations Planning and Campaigns with a grade of "C-" or better in each course.

A. Public Relations Concentration courses

COM 3523	Public Relations	3
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COM 3533	Writing for Public Relations	3
COM 3623	Commercial Publications	3
COM 4523	Case Studies in Public Relations	3
COM 4533	Public Relations Planning and Campaigns	3

B. Additional courses in Communication

Select 9 additional semester credit hours in Communication, at least one course at the upper-division level

C. Required support work

ACC 2003	Foundations of Accounting	3
or ACC 2013	Principles of Accounting I	
ECO 2023	Introductory Microeconomics	3
FIN 3003	Survey of Finance	3

D. Electives

21 semester credit hours of free electives. In fulfillment of this requirement, majors are encouraged to take coursework in disciplines that support the study of Communication. At least 9 of these elective credit hours must be at the upper-division level.

Total Credit Hours **54**

B.A. in Communication with a Digital Communication Concentration

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements listed above. Additionally, students seeking a Digital Communication Concentration must complete COM 2433 Editing, COM 2733 Introduction to Communication Technologies, COM 3413 Digital Media Production I, COM 3623 Commercial Publications, and COM 4723 Digital Media Production II with a grade of "C-" or better in each course.

A. Digital Communication Concentration courses

COM 2433	Editing	3
COM 2733	Introduction to Communication Technologies	3
COM 3413	Digital Media Production I	3
COM 3623	Commercial Publications	3
COM 4723	Digital Media Production II	3

B. Additional Communication Courses

(Select 9 additional semester credit hours in Communication, at least one course at the upper-division level)

C. Required Support work

ACC 2003	Foundations of Accounting	3
or ACC 2013	Principles of Accounting I	
ECO 2023	Introductory Microeconomics	3
FIN 3003	Survey of Finance	3

D. Electives

21 semester credit hours of free electives. In fulfillment of this requirement, majors are encouraged to take coursework in disciplines that support the study of Communication. At least 9 of these elective credit hours must be at the upper-division level.

Total Credit Hours **54**

Course Sequence Guide for B.A. Degree in Communication with a Public Relations or Digital Communication Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate Communication degree requirements. *This*

is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Communication with a concentration – Four-Year Academic Plan

First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053 United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1013 Freshman Composition I (Q) (core)	3
Foreign Language (semester I); core	3-4
Mathematics core	3

Spring

COM 2113 Public Speaking (core and major) ¹	3
HIS 1043, 1053, or 2053 United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1023 Freshman Composition II (Q) (core)	3
Foreign Language (semester II)	3-4
Life & Physical Sciences core	3

Second Year

Fall	Credit Hours
COM 3023 Foundations of Communication ¹	3
COM 3083 Language and Communication Theory ¹	3
ENG 2413 Technical Writing ¹	3
POL 1013 Introduction to American Politics (core)	3
Life & Physical Sciences core	3

Spring

COM 3073 Conduct of Communication Inquiry ¹	3
COM 3553 or 3563 Intercultural Communication (or International Communication) ¹	3
ECO 2023 Introductory Microeconomics (core)	3
POL 1133 or 1213 Texas Politics and Society (core)	3
Free elective	3

Third Year

Fall	Credit Hours
ACC 2003 or 2013 Foundations of Accounting (or Principles of Accounting I)	3
Free elective	3
Free elective	3
Select one of the following:	3
COM 2433 Editing ³	3

Upper-division COM elective ²	3
Select one of the following:	3
COM 3523 Public Relations ^{1,2}	3
COM 2733 Introduction to Communication Technologies ^{1,3}	3

Spring

FIN 3003 Survey of Finance	3
Free elective	3
Creative Arts core	3
Select one of the following:	3
COM 3533 Writing for Public Relations ^{1,2}	3
COM 3413 Digital Media Production I ^{1,3}	3
Select one of the following:	3
COM 3623 Commercial Publications ^{1,2}	3
Upper-division COM elective ^{1,3}	3

Fourth Year

Fall	Credit Hours
COM elective	3
Free elective	3
Support work/Free elective	3
Upper-division support work	3
Select one of the following:	3
COM 4523 Case Studies in Public Relations ^{1,2}	3
COM 3623 Commercial Publications ^{1,3}	3

Total Credit Hours: 120.0

¹ Must be completed with a grade of "C–" or better.

² Public Relations concentration only.

³ Digital Communication concentration only.

Minor in Communication

All students pursuing the Minor in Communication must complete 21 semester credit hours of courses in the Communication program, at least 3 hours of which must be in COM 2113 Public Speaking.

COM 2113 may be used to satisfy a core requirement in the Component Area Option as well as a minor requirement.

To declare a Minor in Communication, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of English

The department offers a Bachelor of Arts degree in English with concentrations in professional writing, creative writing, and English language arts and reading as well as a minor in English Literature and a minor in Professional Writing. Honors can also be earned in English.

Honors in English

The English Department offers its outstanding students the opportunity to pursue Department Honors through advanced study and close faculty mentorship in major courses. To earn Honors, a student must:

1. Maintain a 3.5 grade point average in both major work and support work as well as a 3.25 overall grade point average. Grade point average requirements apply to both transfer and courses taken at UTSA.
2. Take and successfully complete three Honors-designated English classes with a grade of B or better. Any upper-division English class may be designated as Honors pending student petition and approval of the individual instructor. Honors designations involve additional coursework and faculty mentoring.
3. Before graduating, submit for approval from the Departmental Scholarship and Honors Committee a portfolio containing (a) three substantial papers (totaling a minimum of 25 pages) and (b) a critical statement (5 to 8 pages). The substantial papers, at least two of which must be written for Honors-designated English courses, may be revised and edited for submission. The critical statement should assess the papers' contribution to the student's goals as an English major seeking Honors. The critical statement and the substantial papers will be evaluated in terms of research, analysis, eloquence, and command of subject.

Students interested in pursuing Honors may contact the English Department for further information.

- Bachelor of Arts Degree in English (p. 142)
- Bachelor of Arts Degree in English with a Professional Writing Concentration (p. 144)
- Bachelor of Arts Degree in English with a Creative Writing Concentration (p. 145)
- Bachelor of Arts Degree in English with an English Language Arts and Reading Concentration (p. 146)

Bachelor of Arts Degree in English

The minimum number of semester credit hours required for this degree is 120, including the hours of Core Curriculum requirements. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level. Students seeking teacher certification should consult the Interdisciplinary Education Advising and Certification Center for information.

All candidates seeking this degree must complete ENG 2213 Literary Criticism and Analysis and ENG 4973 Seminar for English Majors with a grade of "C–" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in English must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below will satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

ENG 2213 Literary Criticism and Analysis may be used to satisfy the core requirement in Language, Philosophy, and Culture as well as a major requirement. ENG 2413 Technical Writing may be used to satisfy the core requirement in Component Area Option as well as a major requirement for a Bachelor of Arts in English with a Concentration in Professional Writing or for a minor in Professional Writing.

Note: Students seeking the Bachelor of Arts degree in English with a Concentration in Creative Writing are encouraged to complete the Creative Arts core requirement with ENG 1113 Introduction to Creative Literary Arts.

Core Curriculum Component Area Requirements (p. 7)

Gateway Course

Students pursuing the Bachelor of Arts degree in English must successfully complete the following Gateway Course with a grade of "C–" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ENG 2213 Literary Criticism and Analysis

Degree Requirements

A. English major courses

1. Required courses in English	21
ENG 2213	Literary Criticism and Analysis
ENG 2223	British Literature I
ENG 2233	British Literature II
ENG 2263	American Literature I
ENG 2293	American Literature II
ENG 3223	Shakespeare: The Early Plays
or ENG 3233	Shakespeare: The Later Plays
ENG 4973	Seminar for English Majors
2. Foundation courses, 6 hours chosen from two of the following three categories:	6
a. Composition	
ENG 3303	Theory and Practice of Composition
or ENG 3313	Advanced Composition
b. English Language	
ENG 3323	History of the English Language
or ENG 3333	Introduction to the Structure of English
or ENG 3343	Principles of English Linguistics
c. Critical Theory	
ENG 3393	Literary Theories

or ENG 4393	Feminist Theory of Literature	
3. Upper-division courses, 3 hours from each of the following categories. At least 6 of these hours must be in literature; of these 6 hours, at least 3 hours must include the study of American literature.		
a. American, English, Historical		3
ENG 3033	American Literature, 1945 to Present	
ENG 3063	American Literature, 1870–1945	
ENG 4013	Restoration and Eighteenth-Century Literature	
ENG 4023	Romantic Literature	
ENG 4053	Modern British and American Poetry	
ENG 4063	Medieval English Literature	
ENG 4113	Renaissance Literature	
ENG 4143	Victorian Literature	
HUM 3023	The Medieval World	
HUM 3033	Renaissance Ideas	
HUM 3043	Classicism and Enlightenment	
HUM 3053	The Romantic Age	
HUM 3063	The Modern World	
b. Linguistics, Rhetoric, Theory		3
ENG 3303	Theory and Practice of Composition	
ENG 3313	Advanced Composition	
ENG 3323	History of the English Language	
ENG 3333	Introduction to the Structure of English	
ENG 3343	Principles of English Linguistics	
ENG 3393	Literary Theories	
ENG 3413	Specialized Professional Writing	
ENG 3423	Topics in Creative Writing	
ENG 3363	Topics in Rhetoric and Composition	
ENG 3383	Writing in Public, Professional, and Workplace Contexts	
ENG 4423	Studies in Advanced Linguistics	
ENG 4433	Advanced Professional Writing	
ENG 4523	Writer's Workshop: Advanced Fiction Writing	
ENG 4533	Writer's Workshop: Advanced Poetry Writing	
ENG 4933	Internship	
HUM 3013	History of Ideas	
c. Cross-Cultural, Gender Studies, and Race & Ethnic Studies		3
ENG 3133	Women and Literature	
ENG 3513	Mexican American Literature	
ENG 3613	African American Literature	
ENG 3713	Topics in Multiethnic Literatures of the United States	
ENG 3813	Topics in Native American Literature	
ENG 4393	Feminist Theory of Literature	
ENG 4613	Topics in Mexican American Literature	
ENG 4713	Topics in African American Literature	
HUM 3623	Topics in National Cultures and Civilizations	
HUM 3703	Topics in Popular Culture	
d. Authors and Genres		3
CLA 2023	Introduction to Ancient Rome	
CLA 3053	Topics in Classical Genres	
ENG 3073	Young Adult Literature	
ENG 3113	Studies in Individual Authors	

ENG 3123	Modern Fiction	
ENG 3153	Topics in Drama	
ENG 3213	Chaucer	
ENG 3223	Shakespeare: The Early Plays	
ENG 3233	Shakespeare: The Later Plays	
ENG 3243	Topics in the British Novel	
ENG 3253	The American Novel	
ENG 4033	Literary Modes and Genres	
HUM 3103	American Film	
HUM 3203	Film Genres	
HUM 3213	The Christian Classics	
HUM 3223	The Bible as Literature	
HUM 3303	Major Filmmaker	
HUM 3403	Literature into Film	

B. Single language other than English

Select 6 semester credit hours in a single language other than English 6

C. Electives

Select 33 semester credit hours of electives 33

Students are encouraged (but not required) to select electives in such complementary areas of study as:

1. Classical studies (CLA), Humanities (HUM), Philosophy (PHI)
2. Foreign languages, foreign literature (including foreign literatures in translation)
3. Linguistics (including linguistics courses designated ENG, provided that they have not been counted toward the required semester credit hours in English)
4. Communication (COM)
5. Creative writing or expository and technical writing (including courses designated ENG, provided that they have not been counted toward the required semester credit hours in English)
6. American Studies (AMS), Anthropology (ANT), History (HIS), Psychology (PSY), or Sociology (SOC)
7. Art (ART or AHC) or Music (MUS)
8. Mexican American Studies
9. African American Studies
10. Women's Studies
11. Multicultural Studies

Total Credit Hours 78

Course Sequence Guide for B.A. Degree in English

This course sequence guide is designed to assist students in completing their UTSA undergraduate English degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in English – Four-Year Academic Plan

First Year

Fall

Credit Hours

AIS 1203	Academic Inquiry and Scholarship (core)	3	Upper-division Literature category (d) ²	3
WRC 1013	Freshman Composition I (Q) (core)	3	Free Elective	3
Mathematics core		3		
American History core		3		
Life & Physical Sciences core		3		
Spring				
WRC 1023	Freshman Composition II (Q) (core)	3		
Free elective		3		
American History core		3		
Life & Physical Sciences core		3		
Social & Behavioral Sciences core		3		
Second Year				
Fall				
ENG 2213	Literary Criticism and Analysis (core and major)	3		
Component Area Option core		3		
Foreign language (semester I)		3-4		
Free elective		3		
Government-Political Science core		3		
Spring				
ENG 2223	British Literature I	3		
ENG 2263	American Literature I	3		
Foreign language (semester II)		3-4		
Creative Arts core		3		
Government-Political Science core		3		
Third Year				
Fall				
ENG 2233	British Literature II	3		
ENG 2293	American Literature II	3		
Foundation Course (from A. 2. a, b, or c) ¹		3		
Free elective		3		
Upper-division free elective		3		
Spring				
Upper-division Literature category (a) ²		3		
Upper-division Literature category (b) ^{1, 2}		3		
Foundation Course (from A. 2. a, b, or c) ¹		3		
Free elective		3		
Free elective		3		
Fourth Year				
Fall				
ENG 3223 or 3233	Shakespeare: The Early Plays (or Shakespeare: The Later Plays)	3		
Free elective		3		
Free elective		3		
Upper-division free elective		3		
Upper-division Literature category (c) ²		3		
Spring				
ENG 4973	Seminar for English Majors	3		
Free elective		3		
Free elective (to meet 120 hour minimum)		1-3		
			Total Credit Hours:	120.0
			¹ The two Foundation courses must be chosen from two different categories (a, b, or c) under item A. 2. of the degree requirements.	
			² At least one of the courses from categories (a), (b), (c), or (d) (under item A. 3. of the degree requirements) must include the study of American literature.	
Bachelor of Arts Degree in English with a Professional Writing Concentration				
All candidates for the Bachelor of Arts degree in English with a Professional Writing concentration must complete:				
A. Courses for the major				
1. Required courses:				
ENG 2213	Literary Criticism and Analysis	3		
ENG 2223	British Literature I	3		
ENG 2233	British Literature II	3		
ENG 2263	American Literature I	3		
ENG 2293	American Literature II	3		
ENG 3223	Shakespeare: The Early Plays	3		
or ENG 3233	Shakespeare: The Later Plays			
ENG 3313	Advanced Composition	3		
ENG 3413	Specialized Professional Writing	3		
ENG 4933	Internship	3		
ENG 4973	Seminar for English Majors	3		
2. Upper-division courses				
Select one from each of the following categories, at least one must include the study of American literature:				9
(a) American, English, Historical				
(c) Cross-Cultural, Gender Studies, and Race & Ethnic Studies				
(d) Authors and Genres listed above under degree requirements for the B.A. in English				
3. Upper-Division Professional Writing courses, 12 hours total, which must include:				12
ENG 2413	Technical Writing (if not already taken to fulfill core requirement)			
ENG 2433	Editing			
ENG 4433	Advanced Professional Writing			
B. Single language other than English				
Select 6 semester credit hours in a single language other than English				6
C. Electives				
Select 21 semester credit hours of electives				21
Total Credit Hours				78
Course Sequence Guide for B.A. Degree in English with a Concentration in Professional Writing				
This course sequence guide is designed to assist students in completing their UTSA undergraduate English degree requirements. <i>This is merely</i>				

a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in English, Concentration in Professional Writing – Four-Year Academic Plan

First Year

	Credit Hours
Fall	
AIS 1203 Academic Inquiry and Scholarship (core)	3
WRC 1013 Freshman Composition I (Q) (core)	3
Mathematics core	3
American History core	3
Life & Physical Sciences core	3

Spring

WRC 1023 Freshman Composition II (Q) (core)	3
Free elective	3
American History core	3
Life & Physical Sciences core	3
Social & Behavioral Sciences core	3

Second Year

Fall	
ENG 2213 Literary Criticism and Analysis (core and major)	3
ENG 2413 Technical Writing (core and major)	3
Free elective	3
Foreign language (semester I)	3-4
Government-Political Science core	3

Spring

ENG 2223 British Literature I	3
ENG 2433 Editing	3
POL 1133 or 1213 Texas Politics and Society (Government-Political Science core)	3
Foreign language (semester II)	3-4
Creative Arts core	3

Third Year

Fall	
ENG 2233 British Literature II	3
ENG 2263 American Literature I	3
ENG 2293 American Literature II	3
ENG 3313 Advanced Composition	3
Free elective	3

Spring

ENG 3223 or 3233 Shakespeare: The Early Plays (or Shakespeare: The Later Plays)	3
ENG 3413 Specialized Professional Writing	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division Literature category (a)	3

Fourth Year

Fall	
ENG 4433 Advanced Professional Writing	3
ENG 4933 Internship	3
Free elective	3
Free elective	3
Upper-division Literature category (c)	3
Spring	
ENG 4973 Seminar for English Majors	3
Free elective (to meet 120 hour minimum)	1-3
Upper-division free elective	3
Upper-division Literature category (d)	3
Upper-division Professional Writing Course	3
<hr/>	
Total Credit Hours:	120.0

Bachelor of Arts Degree in English with a Creative Writing Concentration

In order to declare a Creative Writing concentration, students must successfully demonstrate proficiency, professionalism, and commitment in their writing portfolios. Entrance into upper-division creative writing courses is not guaranteed and is also dependent upon course availability.

All candidates for the Bachelor of Arts degree in English with a Creative Writing concentration must complete:

A. English courses

1. Required courses		
ENG 2213	Literary Criticism and Analysis	3
ENG 2223	British Literature I	3
ENG 2233	British Literature II	3
ENG 2263	American Literature I	3
ENG 2293	American Literature II	3
ENG 3223	Shakespeare: The Early Plays	3
or ENG 3233	Shakespeare: The Later Plays	
ENG 4973	Seminar for English Majors	3
2. Select two of the following:		
ENG 2323	Creative Writing: Fiction	
ENG 2333	Creative Writing: Poetry	
ENG 2343	Creative Writing: Nonfiction	
3. Upper-division courses		
Select one from each of the following categories, at least one must include the study of American literature.		9
(a) American, English, Historical		
(c) Cross-Cultural, Gender Studies, and Race & Ethnic Studies		
(d) Authors and Genres listed above under degree requirements for the B.A. in English		
4. Select three of the following, at least two of which must be at the 4000 level:		9
ENG 3423	Topics in Creative Writing	
ENG 4523	Writer's Workshop: Advanced Fiction Writing	
ENG 4533	Writer's Workshop: Advanced Poetry Writing	
B. Single language other than English		
Select 6 semester credit hours in a single language other than English		6

C. Electives

Select 27 semester credit hours of electives. Students are encouraged to repeat upper-level workshops, and to include ENG 2433 in their electives.

Total Credit Hours **78**

Course Sequence Guide for B.A. Degree in English with a Concentration in Creative Writing

This course sequence guide is designed to assist students in completing their UTSA undergraduate English degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.*

Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in English, Concentration in Creative Writing – Four-Year Academic Plan

First Year

Fall Credit Hours

AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Mathematics core		3

Spring

ENG 1113	Introduction to Creative Literary Arts (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Social & Behavioral Sciences core		3

Second Year

Fall

ENG 2213	Literary Criticism and Analysis (core and major)	3
Foreign language (semester I)		3-4
Free Elective		3
Component Area Option core		3
Government-Political Science core		3

Spring

ENG 2223	British Literature I	3
ENG 2263	American Literature I	3
ENG 2323, 2333, or 2343	Creative Writing: Fiction (or Creative Writing: Poetry or Creative Writing: Nonfiction)	3
Foreign language (semester II)		3-4
Government-Political Science core		3

Third Year

Fall

ENG 2233	British Literature II	3
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ENG 2293	American Literature II	3
ENG 2323, 2333, or 2343	Creative Writing: Fiction (or Creative Writing: Poetry or Creative Writing: Nonfiction)	3

Free elective		3
Upper-division free elective		3

Spring

ENG 3223 or 3233	Shakespeare: The Early Plays (or Shakespeare: The Later Plays)	3
ENG 3423	Topics in Creative Writing	3
Free elective		3
Upper-division free elective		3
Upper-division Literature category (a) ¹		3

Fourth Year

Fall

ENG 4523 or 4533	Writer's Workshop: Advanced Fiction Writing (or Writer's Workshop: Advanced Poetry Writing)	3
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Free elective		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division Literature category (c) ¹		3

Spring

ENG 4523 or 4533	Writer's Workshop: Advanced Fiction Writing (or Writer's Workshop: Advanced Poetry Writing)	3
ENG 4973	Seminar for English Majors	3
Free elective (to meet 120 hour minimum)		1-3
Upper-division free elective		3
Upper-division Literature category (d) ¹		3

Total Credit Hours: 120.0

¹ At least one of the courses from categories (a), (c), or (d) (under item A. 3. of the degree requirements) must include the study of American literature.

Bachelor of Arts Degree in English with an English Language Arts and Reading Concentration

The Bachelor of Arts degree in English with an English Language Arts and Reading concentration is designed for students intending to teach English at the secondary school level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements listed below.

Students seeking teacher certification should contact the Interdisciplinary Education Advising and Certification Center as early in their educational program as possible for information about teacher certification requirements.

Programs are subject to change without notice due to changes in the state's certification and/or program approval requirements. Teacher

certification programs address standards of the State Board for Educator Certification. Standards can be found at <http://www.tea.state.tx.us/>.

Degree Requirements

A. Courses in English

1. Required courses in English		
ENG 2213	Literary Criticism and Analysis	3
ENG 2223	British Literature I	3
ENG 2233	British Literature II	3
ENG 2263	American Literature I	3
ENG 2293	American Literature II	3
ENG 3223	Shakespeare: The Early Plays	3
or ENG 3233	Shakespeare: The Later Plays	
ENG 4973	Seminar for English Majors	3

2. Upper-division courses
 Select one additional upper-division course in English from the following categories, at least one must include the study of American literature: 6

(a) American, English, Historical		
(d) Authors and Genres listed above under degree requirements for the B.A. in English		
3. Select one of the following: 3		
ENG 3033	American Literature, 1945 to Present	
ENG 3513	Mexican American Literature	
ENG 3613	African American Literature	
ENG 3713	Topics in Multiethnic Literatures of the United States	

4. English Language Arts and Reading concentration		
ENG 3303	Theory and Practice of Composition	3
ENG 3333	Introduction to the Structure of English	3
ENG 3323	History of the English Language	3
or ENG 3343	Principles of English Linguistics	

B. Professional Education and Reading Coursework

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
EDP 3203	Learning and Development in the Secondary School Adolescent	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
RDG 3673	Reading for Secondary Teachers—Grades 8–12	3
RDG 3773	Reading and Writing Across the Disciplines—Secondary	3
SPE 3603	Introduction to Special Education	3

C. Student Teaching

C&I 4646	Student Teaching: Grades 8–12	6
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D. Single language other than English

Select 6 semester credit hours in a single language other than English 6

Total Credit Hours 81

Course Sequence Guide for B.A. Degree in English with a Concentration in English Language Arts and Reading

This course sequence guide is designed to assist students in completing their UTSA undergraduate English degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in English, Concentration in English Language Arts and Reading – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Foreign language (semester I)		3-4
American History core		3
Life & Physical Sciences core		3

Spring

WRC 1023	Freshman Composition II (Q) (core)	3
Foreign language (semester II)		3-4
American History core		3
Life & Physical Sciences core		3
Social & Behavioral Sciences core		3

Second Year

Fall		Credit Hours
ENG 2213	Literary Criticism and Analysis (core and major)	3
ENG 3333	Introduction to the Structure of English	3
Creative Arts core		3
Government-Political Science core		3
Language, Philosophy & Culture core		3

Spring

ENG 2223	British Literature I	3
ENG 2263	American Literature I	3
ENG 3303	Theory and Practice of Composition	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
Government-Political Science core		3
Component Area Option core		3

Third Year

Fall

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ENG 2233	British Literature II	3
ENG 2293	American Literature II	3
ENG 3323 or 3343	History of the English Language (or Principles of English Linguistics)	3
SPE 3603	Introduction to Special Education	3
Spring		
EDP 3203	Learning and Development in the Secondary School Adolescent	3
ENG 3223 or 3233	Shakespeare: The Early Plays	3
ESL 3063	Second Language Acquisition in Early Adolescence	3
RDG 3673	Reading for Secondary Teachers—Grades 8–12	3
Upper-division Literature category (a) ¹		3
Select one of the following:		3
ENG 3033	American Literature, 1945 to Present	3
ENG 3513	Mexican American Literature	3
ENG 3613	African American Literature	3
ENG 3713	Topics in Multiethnic Literatures of the United States	3
Fourth Year		
Fall		
C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
EDP 4203	Assessment and Evaluation	3
ENG 4973	Seminar for English Majors	3
RDG 3773	Reading and Writing Across the Disciplines—Secondary	3
Upper-division Literature category (d) ¹		3
Spring		
C&I 4646	Student Teaching: Grades 8–12	6
Total Credit Hours:		120.0

¹ At least one of the courses from categories (a) or (d) (under item A. 3. of the degree requirements) must include the study of American literature.

- Minor in English Literature (p. 148)
- Minor in Professional Writing (p. 148)

Minor in English Literature

All students pursuing the Minor in English Literature must complete 21 semester credit hours of English and American literature.

A. Required course

ENG 2213	Literary Criticism and Analysis	3
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B. Select three from the following:

ENG 2223	British Literature I	
ENG 2233	British Literature II	
ENG 2263	American Literature I	

ENG 2293	American Literature II	
C. Select one of the following:		3
ENG 3223	Shakespeare: The Early Plays	
ENG 3233	Shakespeare: The Later Plays	
D. Select two upper-division courses in literature in English, one course must include the study of American Literature		6
Total Credit Hours		21

Minor in Professional Writing

All students pursuing the Minor in Professional Writing must complete 21 semester credit hours of professional writing.

A. Required courses

ENG 2413	Technical Writing	3
ENG 2433	Editing	3
ENG 3313	Advanced Composition	3
ENG 3333	Introduction to the Structure of English	3
ENG 3413	Specialized Professional Writing	3
B. Select two from the following:		6
ENG 3303	Theory and Practice of Composition	
ENG 3323	History of the English Language	
or ENG 3343	Principles of English Linguistics	
ENG 3363	Topics in Rhetoric and Composition ¹	
ENG 3383	Writing in Public, Professional, and Workplace Contexts ¹	
ENG 4433	Advanced Professional Writing ¹	
ENG 4933	Internship	
Total Credit Hours		21

¹ These courses are topics courses and may be repeated when topics vary; each may be used to fulfill up to 6 semester credit hours for the minor in professional writing.

Department of History

The Department of History offers Bachelor of Arts degrees in American Studies and History. Students majoring in History may also select a concentration in Social Studies. The department also offers minors in American Studies and History.

Department Honors

Students whose grade point average in the History or American Studies majors before the beginning of their final year at UTSA is 3.5 or above, and whose overall grade point average is 3.2, may earn Department Honors. To do so, students must enroll in the honors thesis course (HIS 4993 or AMS 4993) during their final two semesters and must complete a substantial original research project approved by the faculty supervisor and two other faculty members. Students must maintain a 3.5 grade point average in the major to be eligible for the award. Students who enroll in an Honor's Thesis course (HIS 4993 or AMS 4993) and complete this work satisfactorily **do not** need to enroll in HIS 4973 Seminar in History or AMS 4973 Advanced Seminar in American Studies.

- Bachelor of Arts Degree in American Studies (p. 149)
- Bachelor of Arts Degree in History (p. 150)

- Bachelor of Arts Degree in History with a Concentration in Social Studies (p. 151)

Bachelor of Arts Degree in American Studies

American Studies combines the study of history, literature, the arts, and social sciences to understand the diverse perspectives on cultural traditions and material practices shaping regional, ethnic, class, gender, and political diversity in the United States. American Studies students will conduct interdisciplinary study of topics such as race and ethnicity, gender and sexuality, transnationalism and border studies, urban experience, social justice, cultural studies, and religion. American Studies provides excellent preparation for careers in many fields, including law, journalism, government, foreign service, social work, international business, education, nonprofit, and public administration.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in American Studies must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both a degree requirement and a Core Curriculum requirement; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

AMS 2043 may be used to satisfy the core requirement in Social and Behavioral Sciences as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. American Studies major courses

33 semester credit hours in courses approved by the American Studies advisor. At least 21 semester credit hours must be at the upper-division level.

- 6 semester credits of required courses: 6
 - AMS 2043 Approaches to American Culture
 - AMS 3123 Applications of American Studies
2. 18 semester credit hours of courses focused in the interdisciplinary topics: Transnationalism, Gender and Sexuality, and Race and Ethnicity. A minimum of 3 credits in each area is required. 18
 - AMS 3243 Studies in Transnationalism (may be repeated)
 - AMS 3343 Studies in Race and Ethnicity (may be repeated)
 - AMS 3443 Studies in Gender and Sexuality (may be repeated)
3. 6 semester credit hours of American culture is required. Three credits must be AMS 4823, and three hours from one of the following: 6
 - AMS 3013 Early American Culture
 - or AMS 3023 Modern American Culture

AMS 4823	Topics in American Culture (may be repeated for credit as long as the topics differ. Students can also take AMS 4983 Senior Thesis in their last semester in partial fulfillment of this requirement.)	3
4. 3 semester credit hours of an advanced seminar course is required:		
AMS 4973	Advanced Seminar in American Studies	3
B. Electives		
Select 45 semester credit hours of electives		45
Total Credit Hours		78

Students majoring in American Studies are encouraged to make an advising appointment with their academic advisor early in their course of study.

Course Sequence Guide for B.A. Degree in American Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate American Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in American Studies – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3

Spring

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Life & Physical Sciences core		3

Second Year

Fall		
AMS 2043	Approaches to American Culture (core and major)	3
ECO 2003, 2013, or 2023	Economic Principles and Issues, Introductory Macroeconomics, or Introductory Microeconomics (core)	3

Free elective		3
Free elective		3
Language, Philosophy & Culture core		3
Spring		
Free elective		3
Free elective		3
Free elective		3
Upper-division free elective		3
Life & Physical Sciences core		3
Third Year		
Fall		
AMS 3123	Applications of American Studies	3
AMS 3243	Studies in Transnationalism	3
Free elective		3
Free elective		3
Upper-division free elective		3
Spring		
AMS 3343	Studies in Race and Ethnicity	3
AMS 3443	Studies in Gender and Sexuality	3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3
Fourth Year		
Fall		
AMS 4823	Topics in American Culture	3
AMS 4973	Advanced Seminar in American Studies	3
Free elective		3
Upper-division free elective		3
Creative Arts core		3
Spring		
AMS 3013, 3023, or 4823	Early American Culture (or Modern American Culture or Topics in American Culture)	3
Free elective		3
Free elective		3
Upper-division free elective		3
Free elective (to meet 120 hour minimum)		3
Total Credit Hours:		120.0

Bachelor of Arts Degree in History

The degree program in History combines the development of informed perspectives, cultivation of analytical skills, and mastery of content areas that cover the United States and different regions in the world. A major in History teaches a student to write effectively and expressively, to think critically, to analyze arguments, and to communicate ideas. These skills will all aid in the pursuit of a career in a variety of fields.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in History must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Courses taken to satisfy the core requirement in American History may not be used to satisfy degree requirements. One of the following courses should be used to satisfy the core requirement in Language, Philosophy & Culture:

HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century	3
HIS 2533	Introduction to Latin American Civilization	3
HIS 2543	Introduction to Islamic Civilization	3
HIS 2553	Introduction to East Asian Civilization	3
HIS 2573	Introduction to African Civilization	3
HIS 2583	Introduction to South Asian Civilization	3

Core Curriculum Component Area Requirements (p. 7)

Gateway Course

Students pursuing the Bachelor of Arts degree in History must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

HIS 2003	Historical Methods	
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Degree Requirements

A. History major courses. 21 semester credit hours must be at the upper-division level.

1. Foundation course for the major. Students must take it as early as possible in their program.

HIS 2003	Historical Methods	3
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2. Select three courses from the sophomore-level civilization courses, including the following:

HIS 2123	Introduction to World Civilization to the Fifteenth Century	
HIS 2133	Introduction to World Civilization since the Fifteenth Century	
HIS 2533	Introduction to Latin American Civilization	
HIS 2543	Introduction to Islamic Civilization	
HIS 2553	Introduction to East Asian Civilization	
HIS 2563	Introduction to European Civilization	
HIS 2573	Introduction to African Civilization	

HIS 2583	Introduction to South Asian Civilization	
3. Select 18 upper-division credit hours of history courses, including at least one U.S., one European, and one Latin American, African, or Asian studies course.		
4. Seminar or Honors Thesis		
HIS 4973	Seminar in History (HIS 2003 Historical Methods is a prerequisite for enrollment in this course.)	3
Students who complete an Honor's Thesis may substitute HIS 4993 for HIS 4973.		
B. Single language other than English		
Select 6 semester credit hours of a single language other than English		
C. Electives		
Select 39 semester credit hours of electives. In fulfillment of this requirement, History majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of History.		
Total Credit Hours		78

Course Sequence Guide for B.A. Degree in History

This course sequence guide is designed to assist students in completing their UTSA undergraduate History degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in History – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Spring		
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Life & Physical Sciences core		3

Second Year

Fall		Credit Hours
ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
HIS 2003	Historical Methods	3
Foreign language (semester I)		3-4
Language, Philosophy & Culture core		3
Component Area Option core		3
Spring		
Civilization course		3
Foreign language (semester II)		3-4
Free elective		3
Free elective		3
Life & Physical Sciences core		3
Third Year		
Fall		
Civilization course		3
Free elective		3
Upper-division HIS elective		3
Upper-division U.S. HIS		3
Upper-division free elective		3
Spring		
Civilization course		3
Free elective		3
Upper-division European HIS		3
Upper-division HIS elective		3
Upper-division free elective		3
Fourth Year		
Fall		
Free elective		3
Upper-division African/Asian/Latin American HIS		3
Upper-division HIS Elective		3
Upper-division free elective		3
Creative Arts core		3
Spring		
HIS 4973	Seminar in History	3
Free elective (to meet 120 hour minimum)		1-3
Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
Total Credit Hours:		120.0

Bachelor of Arts Degree in History with a Concentration in Social Studies

The Bachelor of Arts Degree in History with a concentration in Social Studies is designed for students intending to teach history, geography, government and economics at the secondary school level. The signature experience is encapsulated in HIS 4143 History Standards and Their Public Reception. This course reviews the ongoing debates over the content of history curriculum in the schools among historians, educators and the public.

The minimum number of semester credit hours for this degree is 132, including required coursework for teacher certification. Students seeking

teacher certification should also refer to the requirements listed in the College of Education and Human Development section of this catalog.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in History with a concentration in Social Studies must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of the courses that satisfy the Core Curriculum requirements, see below.

GRG 2613 may be used to satisfy the 3 hours of the Life and Physical Sciences core requirement as well as a major requirement. HIS 1043 and HIS 1053 may be used to satisfy the American History core requirement as well as a major requirement. GRG 1013 may be used to satisfy the Social and Behavioral Sciences core requirement as well as a major requirement. ECO 2003 may be used to satisfy the Component Area Option core requirement as well as a major requirement. HIS 2123 may be used to satisfy the Language, Philosophy, and Culture core requirement as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Course

Students pursuing the Bachelor of Arts degree in History must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

HIS 2003 Historical Methods

Degree Requirements

A. Required courses

ANT 1013	Introduction to Anthropology	3
ECO 2003	Economic Principles and Issues	3
ECO 2013	Introductory Macroeconomics	3
GRG 1013	Fundamentals of Geography	3
GRG 1023	World Regional Geography	3
GRG 2613	Physical Geography	3
HIS 1043	United States History: Pre-Columbus to Civil War Era	3
HIS 1053	United States History: Civil War Era to Present	3
HIS 2003	Historical Methods	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century	3
HIS 2563	Introduction to European Civilization	3
HIS 4143	History Standards and Their Public Reception	3
HIS 4973	Seminar in History	3

B. Civilization courses

Select two of the following: 6

ANT 3273	Civilizations of Mexico	
ANT 3723	Ancient Civilizations	
HIS 2533	Introduction to Latin American Civilization	
HIS 2543	Introduction to Islamic Civilization	
HIS 2553	Introduction to East Asian Civilization	
HIS 2573	Introduction to African Civilization	
HIS 2583	Introduction to South Asian Civilization	

C. Upper-division history courses

Specifically two in U.S. history, one in European history, and two in either Latin American, Asian or African history 15

D. Additional courses

Select two of the following:		6
HIS 3093	United States Constitutional History	
POL 3113	American Political Thought	
POL 3283	The American Presidency	
POL 3323	Constitutional Law I	

E. Additional course

Select one of the following:		3
POL 2603	International Politics	
POL 2633	Comparative Politics	
POL 3103	Political Ideology	
POL 3143	Political Philosophy: Modern	
POL 3363	Political Parties and Interest Groups	
POL 3373	The Legislative Process	
POL 3393	Latin American Politics	
POL 3403	European Governments	
POL 3503	American Foreign Policy since World War II	

F. Geography

Select one of the following:		3
GRG 3113	Geography of the United States and Canada	
GRG 3123	Geography of Latin America	
GRG 3133	Geography of Europe	
GRG 3213	Cultural Geography	
GRG 3513	Urban Geography	
GRG 3533	Geography of Economic Activity	
GRG 3643	Political Geography	
GRG 3723	Physiography	

G. Communication, reading and education courses

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
C&I 4646	Student Teaching: Grades 8–12	6
EDP 3203	Learning and Development in the Secondary School Adolescent	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
HIS 2053	Texas History	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
RDG 3773	Reading and Writing Across the Disciplines–Secondary	3

SPE 3603	Introduction to Special Education	3
Total Credit Hours		108

Course Sequence Guide for B.A. Degree in History with a Concentration in Social Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate History degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in History, Concentration in Social Studies – Four-Year Academic Plan

First Year

Fall		Credit Hours
ANT 1013	Introduction to Anthropology	3
ECO 2003	Economic Principles and Issues (core and major)	3
HIS 1043	United States History: Pre-Columbus to Civil War Era (core and major)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Spring		
AIS 1203	Academic Inquiry and Scholarship (core)	3
ECO 2013	Introductory Macroeconomics	3
HIS 1053	United States History: Civil War Era to Present (core and major)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3

Second Year

Fall		Credit Hours
GRG 1013	Fundamentals of Geography (core and major)	3
HIS 2003	Historical Methods	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century (core and major) ¹	3
HIS 2563	Introduction to European Civilization	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
Free elective		3
Spring		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3

GRG 2613	Physical Geography (core and major)	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century ¹	3
Civilization course from Section B		3
Upper-division U.S. HIS		3
Creative Arts core		3

Third Year

Fall

BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	3
EDP 3203	Learning and Development in the Secondary School Adolescent	3
SPE 3603	Introduction to Special Education	3
POL course from Section E		3
POL or HIS course from Section D		3
Upper-division African/Asian/Latin American HIS		3

Spring

EDP 4203	Assessment and Evaluation	3
GRG 1023	World Regional Geography	3
RDG 3773	Reading and Writing Across the Disciplines—Secondary	3
POL or HIS course from Section D		3
Upper-division European HIS		3
Upper-division U.S. HIS		3

Fourth Year

Fall

C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
HIS 4143	History Standards and Their Public Reception	3
HIS 4973	Seminar in History	3
Civilization course from Section B		3
GRG course from Section F		3
Upper-division African/Asian/Latin American HIS		3

Spring

C&I 4646	Student Teaching: Grades 8–12	6
Total Credit Hours:		132.0

¹ HIS 2123 Introduction to World Civilization to the Fifteenth Century and HIS 2133 Introduction to World Civilization since the Fifteenth Century may be taken in either order.

- Minor in American Studies (p. 153)
- Minor in History (p. 154)

Minor in American Studies

All students pursuing a Minor in American Studies must complete 21 semester credit hours.

A. Required courses

AMS 2043	Approaches to American Culture	3
AMS 3123	Applications of American Studies	3
AMS 3243	Studies in Transnationalism	3
AMS 3343	Studies in Race and Ethnicity	3

AMS 3443	Studies in Gender and Sexuality	3
B. Select two of the following:		6
AMS 3013	Early American Culture	
AMS 3023	Modern American Culture	
AMS 4823	Topics in American Culture	
Total Credit Hours		21

To declare a Minor in American Studies, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in History

All students pursuing a Minor in History must complete 18 semester credit hours.

A. Required courses

HIS 2003	Historical Methods	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
or HIS 2133	Introduction to World Civilization since the Fifteenth Century	
Select one of the following:		3
HIS 2533	Introduction to Latin American Civilization	
HIS 2543	Introduction to Islamic Civilization	
HIS 2553	Introduction to East Asian Civilization	
HIS 2563	Introduction to European Civilization	
HIS 2573	Introduction to African Civilization	
HIS 2583	Introduction to South Asian Civilization	

B. Upper-division history electives

Electives		9
Total Credit Hours		18

To declare a Minor in History, obtain advice, or seek approval for substitutions for course requirements, students should consult their academic advisor.

Department of Modern Languages and Literatures

The Department of Modern Languages and Literatures offers a major in Spanish designed to develop the student's specialized knowledge of culture, literature, and language. The department also offers a major in Modern Language Studies, which gives students the opportunity to study various cultural aspects of a language area (including French, German, Japanese, and Russian). Minors in French, German, Russian, Spanish, Comparative Literature, Foreign Languages, and Linguistics give students the opportunity to refine language skills, develop linguistic awareness, and acquire knowledge of a foreign culture and/or literature. Skills-development courses, which facilitate speaking, reading, writing, and understanding of a foreign language, are offered in these languages as well as in Arabic, Chinese, Italian and Korean. Courses in comparative studies in the humanities relate literatures to the other arts and general currents of culture and humanistic thought, while coursework in linguistics focuses on general concepts of linguistic structure and meaning and relates language development to other areas of human understanding. Additional study abroad is strongly encouraged. The department also

offers courses in Media Studies, which allow students to put into practice their theoretical studies in the humanities.

Department Honors

A student whose grade point average in courses taken at UTSA is at least 3.0, whose grade point average in upper-division courses in one of the fields offered as a major in the department is at least 3.5, and who has completed 18 semester credit hours at the upper-division level in the major (24 hours for Spanish) may petition the undergraduate faculty advisor to enroll in the appropriate honors course (FRN 4993 Honors Research, GER 4993 Honors Research, or SPN 4993 Honors Research). If the student maintains the minimum grade point averages upon completion of the course, the Department Honors Committee will evaluate the project the student completed in the honors course and determine whether he or she will be awarded Department Honors.

- Bachelor of Arts Degree in Spanish (p. 154)
- Bachelor of Arts Degree in Modern Language Studies (p. 156)

Bachelor of Arts Degree in Spanish

The minimum number of semester credit hours required for this degree, including the hours in the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

The Signature Experience, included in the required thirty-nine hours, serves as a peak in the student's educational program by providing various opportunities in which to display or practice knowledge gained at UTSA. The Signature Experience can be realized as one of a number of study or practical options, such as an independent study, internship, and study abroad.

The prerequisite for Spanish courses at the 3000 and 4000 levels is either SPN 2023 Intermediate Spanish II, SPN 3003 Oral and Written Expression, or an appropriate placement test score. Information regarding the test may be obtained by contacting the Department of Modern Languages and Literatures. All courses are taught in Spanish unless otherwise noted.

Students seeking teacher certification should consult the Interdisciplinary Education Advising and Certification Center for information.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Spanish must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both a degree requirement and a Core Curriculum requirement, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

SPN 1014 may be used to satisfy the Language, Philosophy and Culture core requirement.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Courses within the major, all of which must be at the upper-division level

1. Required courses (recommended for early completion)		
SPN 3043	Introduction to Literature	3
SPN 3063	Grammar and Composition	3
SPN 4003	Advanced Language Skills	3
2. Select two of the following:		6
SPN 3013	Spanish Phonetics and Phonology	
SPN 3113	Linguistic Structures of Spanish	
SPN 4113	Topics in Spanish Linguistics	
3. Select three of the following:		9
SPN 3413	The Literature of Spain from the Middle Ages to 1700	
SPN 3423	The Literature of Spain from 1700 to the Present	
SPN 3463	Latin American Literature to Modernism	
SPN 3473	Latin American Literature since Modernism	
SPN 4203	Topics in Hispanic Literatures	
4. Select two of the following:		6
SPN 3613	Spanish Culture and Civilization	
SPN 3623	Latin American Culture and Civilization	
SPN 4303	Topics in Hispanic Cultures	
5. Spanish Electives, at least one course must be at the 4000 level		9
6. Select one course as Signature Experience. The course can be applied to section A5 as part of the Spanish elective hours or to the free electives in section B. The following courses can be used as the Signature Experience:		
FL 3033	Advanced Language Study Abroad	
FL 3036	Advanced Language Study Abroad	
SPN 4113	Topics in Spanish Linguistics	
SPN 4203	Topics in Hispanic Literatures	
SPN 4303	Topics in Hispanic Cultures	
SPN 4933	Internship in Spanish	
SPN 4993	Honors Research	
Study abroad experience with transfer credits from another university		
B. Free Electives		39
In fulfillment of this requirement, majors are encouraged to take at least 12 semester credit hours of upper-division coursework in disciplines that support the study of foreign languages.		
Total Credit Hours		78

Course Sequence Guide for B.A. Degree in Spanish

This course sequence guide is designed to assist students in completing their UTSA undergraduate Spanish degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations.

Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Spanish – Four-Year Academic Plan

First Year

Fall		Credit Hours
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
SPN 1014	Elementary Spanish I (or free elective)	3-4
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Life & Physical Sciences core		3

Spring

AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
SPN 1024	Elementary Spanish II (or free elective)	3-4
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3

Second Year

Fall

ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
POL 1013	Introduction to American Politics (core)	3
SPN 2013	Intermediate Spanish I (or free elective)	3
Free elective		3
Language, Philosophy & Culture core or free elective		3

Spring

POL 1133 or 1213	Texas Politics and Society (core)	3
SPN 2023	Intermediate Spanish II	3
Free elective		3
Creative Arts core		3
Component Area Option core		3

Third Year

Fall

SPN 3013, 3113, or 4113	Spanish Phonetics and Phonology	3
SPN 3063	Grammar and Composition	3
Free elective		3
Free elective		3
Support work		3

Spring

SPN 3013, 3113, or 4113	Spanish Phonetics and Phonology	3
SPN 3043	Introduction to Literature	3

SPN 4003	Advanced Language Skills	3
Support work		3
Upper-division SPN elective		3
Fourth Year		
Fall		
SPN 3413, 3423, 3463, 3473, or 4203	The Literature of Spain from the Middle Ages to 1700	3
SPN 3413, 3423, 3463, 3473, or 4203	The Literature of Spain from the Middle Ages to 1700	3
SPN 3613, 3623, or 4303	Spanish Culture and Civilization	3
Free elective (to meet 120 hour minimum)		1-3
Support work		3
Spring		
SPN 3413, 3423, 3463, 3473, or 4203	The Literature of Spain from the Middle Ages to 1700	3
SPN 3613, 3623, or 4303	Spanish Culture and Civilization	3
4000-level SPN elective		3
Support work		3
Upper-division SPN elective		3
Total Credit Hours:		120.0

A series of courses taught in English addresses the study of the literature and culture of each individual language taught in the program. The courses in comparative studies address various issues related to several regions, periods and fields of study.

Each of these basic components can be augmented using the 18 semester credit hours of support work. By carefully preparing a plan of study with an academic advisor, students can tailor the concentration to their own needs.

The following optional components are strongly recommended:

1. Study Abroad
Study abroad in the target language environment will give students the opportunity to further enhance their language and culture skills. Students are encouraged to include a semester or at least a summer abroad in their degree plan.
2. Languages Across the Curriculum
1-semester-credit-hour language courses offered online (FL 3101 Languages Across the Curriculum) will complement the student's support area courses in other disciplines, such as history and political science. These add-on components will mirror the topics taught in the regular courses.

The minimum number of semester credit hours required for the Bachelor in Arts degree in Modern Language Studies, including the hours in the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. Students seeking teacher certification should consult the Interdisciplinary Education Advising and Certification Center for information.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Modern Language Studies must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both a degree requirement and a Core Curriculum requirement, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy Core Curriculum requirements, see below.

CSH 1103, CSH 1113, CSH 1213, or CSH 2113 should be used to satisfy the core requirement in Language, Philosophy and Culture.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Courses within the major

1. Language courses in a single discipline	18
Select two courses in intermediate courses and four upper-division courses in a single language discipline	
2. Linguistics courses	
LNG 3813 Introduction to Linguistics	3
3. Select four courses in comparative studies and/or in literature in translation, two of which must be at the upper-division level	12
a. Select one to two language-specific literature and culture courses:	
CSH 1213 Topics in World Cultures	

Bachelor of Arts Degree in Modern Language Studies

The major in Modern Language Studies addresses the growing need for students to prepare for the demands brought about by globalization and the increased national focus on international security. It provides the opportunity for UTSA students to graduate with an emphasis in a language area according to their individual career interests. It is designed to give students the opportunity to structure their program in a variety of concentrations, including double majors. By selecting the Modern Language Studies major, students receive a well-rounded humanistic education and prepare themselves for jobs requiring a flexible liberal arts degree, among them careers in government, national security, public service, teaching, international business, banking, international media, communications, tourism, foreign relations, and publishing. The Modern Language Studies major also develops skills, knowledge, and cultural awareness which provide a solid foundation for successful work in graduate studies in the humanities and social sciences, as well as in law and medicine.

The program includes three main components:

1. The learning of a specific language
For this major, the student will move through three levels of proficiency. The first and second levels are completed with the basic four-semester sequence, Elementary I-II and Intermediate I-II courses in the chosen language. The third level is completed by taking 12 semester credit hours of upper-division coursework after successful completion of the basic sequence. A placement test will determine at which level of the sequence the student should start the study of a language.
2. The linguistic theory underlying languages and language learning
The introductory linguistic course gives students a basis for more advanced theoretical approaches to language studies in general.
3. The cultural component

CSH 2113	The Foreign Film	
FRN 2333	French Literature in English Translation	
GER 2333	German Literature in English Translation	
ITL 2333	Italian Literature in English Translation	
RUS 2333	Russian Literature in English Translation	
SPN 2333	Hispanic Literature in English Translation	

b. Select two to three comparative studies courses:

CSH 1103	Literary Masterpieces of Western Culture I	
CSH 1113	Literary Masterpieces of Western Culture II	
CSH 2313	Introduction to Literary Studies	
CSH 3023	Studies in Comparative Literature	
CSH 3823	Advanced Topics in World Cultures	
MES 3113	Film Studies	

4. Select 3 semester credit hours of signature experience (FL 4953 Special Projects, study abroad, internship, etc.). Students in the Honors program are encouraged to complete an Honors thesis. 3

B. Support work in any language or internationally focused topics

Select 18 semester credit hours of support work in any language or internationally focused topics in such disciplines as African American studies, American studies, anthropology, art history, bicultural-bilingual studies, classics, communication, English as a second language, geography, history, humanities, interdisciplinary studies, international business, international studies, linguistics, literature, music history, philosophy, political science, psychology, sociology, and women’s studies. Course selections must be approved by the academic advisor. 18

Study Abroad and Languages Across the Curriculum courses are strongly recommended.

C. Electives

Select 24 semester credit hours of electives 24

Total Credit Hours 78

Course Sequence Guide for B.A. Degree in Modern Language Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate Modern Language Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Modern Language Studies – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3

Language 1014 or free elective	3-4
Life & Physical Sciences core	3

Spring

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3

Language 1024 or free elective	3-4
Life & Physical Sciences core	3
Mathematics core	3

Second Year

Fall

ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
POL 1013	Introduction to American Politics (core)	3

Free elective	3
Language 2013 (Intermediate I)	3
Language, Philosophy & Culture core	3

Spring

POL 1133 or 1213	Texas Politics and Society (core)	3
Free elective	3	
Language 2023 (Intermediate II)	3	
Creative Arts core	3	
Component Area Option core	3	

Third Year

Fall

LNG 3813	Introduction to Linguistics	3
Degree requirement A.3.a.	3	
Free elective	3	
Support work	3	
Upper-division language course	3	

Spring

Degree requirement A.3.a. or b.	3
Degree requirement A.3.a. or b.	3
Free elective	3
Support work	3
Upper-division language course	3

Fourth Year

Fall

Degree requirement A.3.a. or b.	3
Support work	3
Support work	3
Upper-division language course	3
Upper-division language course	3

Spring

Free elective	3
Free elective (to meet 120 hour minimum)	1-3
Signature Experience	3
Support work	3

Support work	3
Total Credit Hours:	120.0

- Minor in Spanish (p. 158)
- Minor in French (p. 158)
- Minor in German (p. 158)
- Minor in Comparative Literature (p. 158)
- Minor in Foreign Languages (p. 158)
- Minor in Linguistics (p. 158)
- Minor in Russian (p. 159)

Minor in Spanish

All students pursuing the Minor in Spanish must complete 18 semester credit hours.

A. Required language skill courses

SPN 2023	Intermediate Spanish II	3
SPN 3003	Oral and Written Expression	3
SPN 3033	Oral Communication Skills	3
SPN 3063	Grammar and Composition	3
SPN 4003	Advanced Language Skills	3

B. Upper-division Spanish courses

Select 3 semester credit hours of other upper-division Spanish courses chosen in consultation with the advisor	3
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Total Credit Hours	18
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Minor in French

All students pursuing the Minor in French must complete 18 semester credit hours at the 2000 level and above.

A. Required language skill courses

FRN 2013	Intermediate French I	3
FRN 2023	Intermediate French II	3
FRN 3023	Advanced Language Skills	3

B. Additional courses in French or French-related topics, including CSH and FL

Select 9 semester credit hours, 6 hours of which must be at the upper-division level, chosen in consultation with the advisor for the Minor in French	9
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Total Credit Hours	18
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Minor in German

All students pursuing the Minor in German must complete 18 semester credit hours at the 2000 level and above.

A. Required language skill course

GER 2013	Intermediate German I	3
GER 2023	Intermediate German II	3
GER 3023	Advanced Language Skills	3

B. Additional German or German-related courses, including CSH and FL

Select 9 semester credit hours, 6 of which must be at the upper-division level, chosen in consultation with the advisor for the Minor in German	9
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Total Credit Hours	18
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Minor in Comparative Literature

The Minor in Comparative Literature offers an opportunity to study texts in a manner that transcends national and linguistic boundaries. It enables students to develop, through their majors, a solid grounding in one particular tradition (e.g., English, Spanish, French) or one discipline (e.g., history, music) while also embracing a broader perspective through the minor. A student minoring in comparative literature may wish to pursue graduate work in comparative literature or in a specific national literary tradition or to pursue a career in translation, teaching, publishing, or writing. The Minor in Comparative Literature fosters the sophistication appropriate to a liberal arts degree.

All students pursuing the Minor in Comparative Literature must complete 18 semester credit hours.

A. Upper-division literature courses

Select 12 semester credit hours from at least two of the following disciplines: Classics, English, French, German, Italian, Russian, or Spanish	12
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B. Upper-division in comparative studies in the humanities

1. Comparative Literature		
CSH 3023	Studies in Comparative Literature	3
2. One course of an additional upper-division CSH course	3	

Total Credit Hours	18
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Minor in Foreign Languages

The Minor in Foreign Languages offers an opportunity to increase proficiency in reading, writing, speaking, and listening skills in a foreign language. The minor will lead to the acquisition of metalinguistic skills and an enhanced understanding of the target culture and its orientation to world communication.

All students pursuing the Minor in Foreign Languages must complete 18 semester credit hours at the 2000 level and above.

A. Language skill courses in the same language at the 2000 level or above

Language skill courses	6
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B. Language and Linguistics courses, including FL

Select 12 semester credit hours in the department, 9 hours of which must be at the upper-division level	12
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Total Credit Hours	18
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Minor in Linguistics

The Minor in Linguistics offers an enhanced awareness of the components, functions, and interfaces of human language. It prepares students for careers and advanced study for which such awareness is essential through coursework aligned with a student's own professional goals and intellectual interests.

All students pursuing the Minor in Linguistics must complete 18 semester credit hours, at least 9 of which must be drawn from outside the major.

A. Minor courses

ENG 3343	Principles of English Linguistics	3
or LNG 3813	Introduction to Linguistics	

B. Linguistics of a particular language

Select one of the following: 3

ENG 3323	History of the English Language	
ENG 3333	Introduction to the Structure of English	
SPN 3013	Spanish Phonetics and Phonology	
SPN 3113	Linguistic Structures of Spanish	
SPN 4113	Topics in Spanish Linguistics	
SPN 4123	The Spanish of the United States	

C. Additional courses

Select two of the following in psycholinguistics, anthropological linguistics, sociolinguistics, or historical linguistics: 6

ANT 2053	Introduction to Cultural Anthropology	
BBL 3013	Language Analysis and Bilingualism	
BBL 3133	Language Development in Bilinguals	
BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society	
LNG 3833	Sociolinguistics	
PSY 4323	Psychology of Language	

D. Two additional courses chosen in consultation with an advisor

Select two courses in one or more of the following approved areas: anthropology, bicultural-bilingual studies, English, foreign languages, and linguistics 6

Total Credit Hours 18

Minor in Russian

All students pursuing the Minor in Russian must complete 18 semester credit hours at the 2000 level and above.

A. Required Language skill courses

RUS 2013	Intermediate Russian I	3
RUS 2023	Intermediate Russian II	3

B. Additional Russian or Russian-related courses, including CSH and FL

Select 12 additional semester credit hours, 9 hours must be at the upper-division level 12

Total Credit Hours 18

Department of Music

The Department of Music offers the Bachelor of Music degree and the Bachelor of Arts in Music degree. Students may select the Bachelor of Music in Music Studies (with all-level teacher certification) or the Bachelor of Music with an emphasis in either music performance, composition, or music marketing. The department also offers a Minor in Dance, a Minor in Music, a Certificate in Music Technology, and a Certificate in Jazz Studies. The Department of Music is accredited by the National Association of Schools of Music.

Students entering the Bachelor of Music program with a Music Studies concentration may be required to satisfy additional requirements as prescribed by the State Board for Educator Certification (SBEC) and

are advised to consult the Interdisciplinary Education Advising and Certification Center.

A diagnostic examination in music theory is given to music majors entering UTSA for the first time. This examination is given at the beginning of each semester and used as an aid in advising.

In order to declare music as a major, students must successfully audition for faculty in their principal performance area. If a student is not enrolled in Private Instruction for two consecutive long semesters (Fall or Spring), the student must re-audition for admission into the music program and for placement in an appropriate level of private instruction.

The music faculty and students support the COLFA Signature Experience through the following capstone experiences in the music studies concentration and the three undergraduate music emphases:

Music Studies: Student Teaching (C&I 4716 Student Teaching: All Level EC–12). The student applies knowledge from his or her undergraduate music and education training and leads music learning in the public school music classroom under the supervision and guidance of a cooperating music teacher and a university supervisor.

Music Performance: Senior Recital (MUS 4561 Senior Recital). The student performs a one-hour recital under the guidance and supervision of his or her music professor. This performance is adjudicated by a panel of a minimum of three music faculty and includes representative solo and chamber works from a broad repertoire.

Composition: Senior Recital (MUS 4561 Senior Recital). The student organizes a recital of his or her own compositions. Under the guidance and supervision of a music professor, works are presented in a variety of musical genres and are adjudicated by the composition faculty.

Music Marketing: Music Marketing Internship (MUS 4933 Music Marketing Internship). The student coordinates and establishes his or her own internship in a professional setting. Under the guidance and supervision of a music business leader and university professor, the student applies knowledge and skills from their university coursework.

- Bachelor of Music Degree (p. 159)
 - Music Studies Concentration (p. 160)
 - Composition Emphasis (p. 164)
 - Music Performance Emphasis (p. 165)
 - Music Marketing Emphasis (p. 169)
- Bachelor of Arts Degree in Music (p. 171)

Bachelor of Music Degree

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 133 in the Music Studies concentration, 130 in the Composition emphasis, 130 in the Music Performance emphasis, and 130 in the Music Marketing emphasis. Undergraduates seeking elementary teacher certification must complete the Interdisciplinary Studies degree.

All candidates for this degree must fulfill the Core Curriculum requirements and the music degree requirements, which are listed below. In addition, a candidate for the Bachelor of Music degree must complete the course requirements for the concentration or emphasis declared by the candidate.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Music degree must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MUS 2243 should be used to satisfy the core requirement in Creative Arts as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Music degree must successfully complete the following Gateway Courses in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

MUS 1102	Aural Skills I
MUS 1112	Basic Skills of Music I

Music Degree Requirements

All candidates for the Bachelor of Music degree, regardless of concentration or emphasis, must complete the following 45–47 semester credit hours of required music courses. (Note that MUS 2243 World Music in Society should also be used to satisfy Core Curriculum requirements in Creative Arts):

MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 2102	Aural Skills III	2
MUS 2112	Aural Skills IV	2
MUS 2152	Basic Skills of Music III	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society	3
MUS 2403	Conducting I	3
MUS 2542	Music Performance-Private Instruction II (2 semesters)	4
MUS 3213	Music in Civilization I	3
MUS 3223	Music in Civilization II	3
MUS 3413	Psychology of Music	3
MUS 3532	Music Performance-Private Instruction III (2 semesters) ¹	4

Keyboard requirement. Select one of the following options:		2
Option 1: Non-Keyboard Principal Instrument		
MUS 2421	Class Piano 3	
MUS 2521	Class Piano 4	

Option 2: Keyboard Principal Instrument	
MUS 1552	Functional Piano for Keyboard Principals

Total Credit Hours **45**

¹ Music Performance Emphasis students should take MUS 3543 Music Performance-Private Instruction IV (2 semesters) instead.

Special Degree Requirements

All students pursuing the Bachelor of Music degree are required:

- to make one recital appearance during the last semester of required study on their principal instrument; performance majors are required to make a minimum of one recital or area seminar appearance each semester on their principal instrument
- to perform in University ensembles; specific ensemble requirements for each emphasis or concentration are outlined in the Department of Music Student Handbook (available online)
- to meet music performance proficiency standards established for principal instruments; students not meeting those standards must repeat music performance courses until the proficiency standards have been met
- to fulfill the recital and seminar attendance requirements as defined in the Department of Music Student Handbook.

In addition, candidates for the Bachelor of Music degree must complete the course requirements for the concentration or emphasis they declare.

Music Studies Concentration (with all-level teacher certification)

All candidates for this concentration must fulfill the Music Degree Requirements (45 hours), as well as the course requirements necessary for this concentration (49 hours). Details regarding the following requirements for each principal instrument area are available in the Department of Music Student Handbook.

The principal instrument for those whose student teaching will be in band must be a woodwind, brass, or percussion instrument(s); for instance, traditional percussion instruments as found in a band or orchestra—timpani, mallet instruments, multi-percussion, but not drum set.

The principal instrument for those whose student teaching will be in string classes or orchestra must be violin, viola, cello, contrabass (not electric bass), or classical guitar.

The principal instrument for those whose student teaching will be in choral-elementary general music must be voice, guitar, or piano.

The principal instrument for those whose student teaching will be in elementary general music-secondary instrumental must be violin, viola, cello, contrabass, guitar, woodwind, brass or traditional percussion.

A qualifying 30-minute proficiency recital must be presented on the student’s principal instrument and approved prior to the semester of student teaching; specific requirements are outlined in the Department of Music Student Handbook.

A. Courses within the music major

1. Required music courses		15-17
Wind Instrument and Percussion Principals		
MUS 3153	Conducting II (Instrumental)	
MUS 3232	Wind and Percussion Literature	

MUS 3312	Music Technology for Music Educators
MUS 3401	Brass Instruments
MUS 3421	Vocal Techniques for Instrumental Majors
MUS 3431	Woodwind Instruments
MUS 3453	Teaching Elementary Music
MUS 3471	String Instruments
MUS 3481	Percussion Instruments
MUS 4452	Marching Band Techniques
String Instrument Principals	
MUS 3153	Conducting II (Instrumental)
MUS 3242	String Literature
MUS 3312	Music Technology for Music Educators
MUS 3401	Brass Instruments
MUS 3421	Vocal Techniques for Instrumental Majors
MUS 3431	Woodwind Instruments
MUS 3453	Teaching Elementary Music
MUS 3471	String Instruments
MUS 3481	Percussion Instruments
Guitar Principals (Orchestral)	
MUS 3153	Conducting II (Instrumental)
MUS 3312	Music Technology for Music Educators
MUS 3332	Advanced Guitar Literature
MUS 3401	Brass Instruments
MUS 3421	Vocal Techniques for Instrumental Majors
MUS 3431	Woodwind Instruments
MUS 3453	Teaching Elementary Music
MUS 3471	String Instruments
MUS 3481	Percussion Instruments
Guitar Principals (Choral)	
MUS 3153	Conducting II (Choral)
MUS 2601	Diction Survey
MUS 3312	Music Technology for Music Educators
MUS 3332	Advanced Guitar Literature
MUS 3453	Teaching Elementary Music
MUS 3463	Teaching Secondary Vocal Music
MUS 3491	Instrumental Techniques for Voice Majors
Voice and Keyboard Principals	
MUS 3153	Conducting II (Choral)
MUS 2601	Diction Survey
MUS 3272	Choral Literature (Renaissance to Baroque topic)
MUS 3272	Choral Literature (Classical to 20th-Century topic)
MUS 3312	Music Technology for Music Educators
MUS 3453	Teaching Elementary Music
MUS 3463	Teaching Secondary Vocal Music
MUS 3491	Instrumental Techniques for Voice Majors

Wind and percussion students interested in teaching general music may substitute C&I 4213 Approaches to Teaching Music (Vocal) for MUS 4452 Marching Band Techniques. Students who choose this option will do half of their student teaching in an elementary general music placement and half in a middle school band placement. This option requires consultation with the student's music advisor.

String students interested in teaching general music may substitute C&I 4213 Approaches to Teaching Music (Vocal) for the two-semester MUS 1511 Music Performance-Secondary Instrument requirement (in the section below). Students who choose this option will do half of their student teaching in an elementary general music placement and half in a secondary level orchestra placement. This option requires consultation with the student's music advisor.

2. Additional required music performance study 2-4

Wind Instrument and Percussion Principals

MUS 4532 Music Pedagogy (Instrumental)

String Instrument Principals

MUS 1511 Music Performance-Secondary Instrument (violin or viola) ¹

MUS 1511 Music Performance-Secondary Instrument (cello or bass)

MUS 4532 Music Pedagogy (Instrumental)

Guitar Principals (Orchestral)

MUS 1511 Music Performance-Secondary Instrument (strings two semesters)

MUS 4532 Music Pedagogy (Guitar)

Guitar Principals (Choral)

MUS 1511 Music Performance-Secondary Instrument (strings two semesters)

MUS 4532 Music Pedagogy (Guitar)

Voice Principals

MUS 4531 Vocal Pedagogy I

MUS 4541 Vocal Pedagogy II

Keyboard Principals

MUS 1511 Music Performance-Secondary Instrument (voice two semesters)

3. Three ensemble courses as assigned by the ensemble directors 6

B. Professional Education courses

24 semester credit hours of professional education courses (including 24 6 hours of student teaching and 3 hours in a state-mandated reading course); for specific required courses, consult the Interdisciplinary Education Advising and Certification Center.

C. Students electing the Music Studies concentration must successfully complete the pre-certification interview with the Music Studies Committee for approval to continue as a music studies major at the upper-division level.

D. Students enrolled in the Music Studies concentration must successfully complete competency tests to receive certification as specified by the Texas State Board for Educator Certification.

Total Credit Hours

49

¹ Secondary instrument must not be the same as principal instrument.

Course Sequence Guide for B.M. with a Music Studies Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic

preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Music in Music Studies (Instrumental) – Five-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
MUS 3802	UTSA Marching Band (only required of wind/percussion principals) ¹	2
WRC 1013	Freshman Composition I (Q) (core)	3
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band)	2

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band)	2
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
WRC 1023	Freshman Composition II (Q) (core)	3
University core math course		3

Summer

University core course		3
University core course		3

Second Year

Fall		Credit Hours
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2232	Introduction to Guitar Literature ³	2
MUS 2421	Class Piano 3	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3431	Woodwind Instruments	1
MUS 3453	Teaching Elementary Music	3
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band)	2
MUS 3802	UTSA Marching Band ¹ (only required of wind/percussion principals)	2

Spring

MUS 1511	Music Performance-Secondary Instrument ⁴	1
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society (core)	3
MUS 2521	Class Piano 4	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3471	String Instruments	1
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) ¹	2
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
Summer		
University core course		3
University core course		3
Third Year		
Fall		
MUS 2403	Conducting I	3
MUS 3481	Percussion Instruments	1
MUS 3532	Music Performance-Private Instruction III	2
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) ¹	2
MUS 4452	Marching Band Techniques ²	2
EDP 3203	Learning and Development in the Secondary School Adolescent	3
University core course		3
Spring		
MUS 3153	Conducting II	3
MUS 3232, 3242, or 3332	Wind and Percussion Literature (or String Literature, Advanced Guitar Literature)	2
MUS 3401	Brass Instruments	1
MUS 3421	Vocal Techniques for Instrumental Majors	1
MUS 3532	Music Performance-Private Instruction III	2
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) ¹	2
University core course		3
Summer		
University core course		3
University core course		3
Fourth Year		
Fall		
C&I 4213	Approaches to Teaching Music	3
MUS 1511	Music Performance-Secondary Instrument ⁴	1
MUS 3223	Music in Civilization II	3

MUS 3312	Music Technology for Music Educators	2
MUS 3413	Psychology of Music	3
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) ¹	2
MUS 4532	Music Pedagogy	2
Spring		
C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
MUS 3213	Music in Civilization I	3
RDG 3773	Reading and Writing Across the Disciplines—Secondary	3
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or Wind Ensemble, Symphonic Band, University Band) ¹	2
University core course		3
Fifth Year		
Fall		
C&I 4716	Student Teaching: All Level EC–12	6
Total Credit Hours:		133.0

- ¹ Special degree requirement. Not included in total degree hours.
- ² Only required of Wind/Percussion principals. Wind and percussion students interested in teaching general music may substitute C&I 4213 (Vocal) for MUS 4452.
- ³ Only required of guitar principals. Special degree requirement. Not included in total degree hours.
- ⁴ Only required of String and Guitar principals.

Bachelor of Music in Music Studies (Choral) – Five-Year Academic Plan

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
MUS 2601	Diction Survey	1
WRC 1013	Freshman Composition I (Q) (core)	3
MUS 3712 or 3722	Concert Choir (or Women's Choir)	2
Spring		
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
MUS 3712 or 3722	Concert Choir (or Women's Choir)	2

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
WRC 1023	Freshman Composition II (Q) (core)	3
Summer		
University core course		3
University core course		3
Second Year		
Fall		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2232	Introduction to Guitar Literature ⁵	2
MUS 2421	Class Piano 3 ²	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
University core course		3
Spring		
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society (core)	3
MUS 2403	Conducting I	3
MUS 2521	Class Piano 4 ²	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3712 or 3722	Concert Choir (or Women's Choir)	2
University core course		3
Summer		
University core course		3
University core course		3
Third Year		
Fall		
MUS 3272	Choral Literature ³	2
MUS 3453	Teaching Elementary Music	3
MUS 3532	Music Performance-Private Instruction III	2
MUS 3712 or 3722	Concert Choir ¹ (or Women's Choir)	2
EDP 3203	Learning and Development in the Secondary School Adolescent	3
University core course		3
Spring		
MUS 3153	Conducting II	3
MUS 3463	Teaching Secondary Vocal Music	3
MUS 3491	Instrumental Techniques for Voice Majors	1
MUS 3413	Psychology of Music	3
MUS 3532	Music Performance-Private Instruction III	2
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
Summer		

University core course		3
University core course		3
Fourth Year		
Fall		
C&I 4213	Approaches to Teaching Music	3
MUS 3213	Music in Civilization I	3
MUS 3272	Choral Literature ³	2
MUS 3312	Music Technology for Music Educators	2
MUS 4531	Vocal Pedagogy I ⁴	1
RDG 3773	Reading and Writing Across the Disciplines—Secondary	3
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
Spring		
C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
MUS 3223	Music in Civilization II	3
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
MUS 4541	Vocal Pedagogy II ⁴	1
University core course		3
Fifth Year		
Fall		
C&I 4716	Student Teaching: All Level EC–12	6
Total Credit Hours:		133.0

- ¹ Special degree requirement. Not included in total degree hours.
- ² Piano principals will substitute one semester of MUS 1552.
- ³ Guitar principals will substitute one semester of MUS 3332 and two semesters of MUS 1511.
- ⁴ Guitar principals will substitute one semester of MUS 4532. Keyboard principals will substitute two semesters of MUS 1511.
- ⁵ Only required of guitar principals. Special degree requirement. Not included in total degree hours.

Composition Emphasis

All candidates for this emphasis must fulfill the Music Degree Requirements (45 hours), as well as the course requirements necessary for this emphasis (46 hours).

A. Required music performance courses

1. Approved secondary instrument(s)	2
2. Ensemble as assigned by the ensemble directors, as outlined in the Department of Music Student Handbook	8

B. Required composition lessons

MUS 1141	Beginning Composition	1
MUS 2141	Composition II (2 semesters)	2
MUS 3162	Composition III (2 semesters)	4
MUS 4142	Composition IV (2 semesters)	4

C. Additional approved upper-level music theory, history, and technology courses

Select 15 additional semester credit hours from the following courses, with advisor approval	15
MUS 3013	Digital Music Production

MUS 3123	Introduction to Electronic and Computer Music
MUS 3133	Analysis of Twentieth-Century Music
MUS 3143	Orchestration
MUS 3263	Music Since 1900
MUS 4113	Counterpoint
MUS 4163	Topics in Music Theory

D. Electives

Select 9 semester credit hours of electives. Students intending to pursue graduate studies in Composition or Theory are strongly encouraged to take at least two semesters of a foreign language as electives; preferred languages include German, French, or Italian. Guitar principals must elect MUS 2232 Introduction to Guitar Literature. 9

E. Students electing the Composition emphasis must interview with the Composition Committee for approval to pursue the emphasis at the upper-division level.

F. Senior Recital is required of all students in the Composition emphasis

MUS 4561	Senior Recital	1
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The student's senior recital shall include a selection of the student's compositions totaling a minimum of 30 minutes. The student will submit completed musical scores representing a majority of the proposed recital program to an examining committee the semester before that of the recital. The examining committee shall determine the acceptability of the recital program.

Total Credit Hours **46**

Course Sequence Guide for B.M. with a Composition Emphasis

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Music in Composition – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
WRC 1013	Freshman Composition I (Q) (core)	3
Major ensemble		2

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1141	Beginning Composition	1

MUS 1542	Music Performance-Private Instruction I	2	University core course	3
MUS 1621	Class Piano 2 ¹	1		
Major ensemble		2		
WRC 1023	Freshman Composition II (Q) (core)	3		
University core math course		3		
Summer				
University core math course		3		
Second Year				
Fall				
MUS 2102	Aural Skills III	2		
MUS 2141	Composition II	1		
MUS 2152	Basic Skills of Music III	2		
MUS 2403	Conducting I	3		
MUS 2421	Class Piano 3 ¹	1		
MUS 2542	Music Performance-Private Instruction II	2		
Major ensemble		2		
University core course		3		
Spring				
MUS 2112	Aural Skills IV	2		
MUS 2141	Composition II	1		
MUS 2162	Basic Skills of Music IV	2		
MUS 2243	World Music in Society (core)	3		
MUS 2521	Class Piano 4 ¹	1		
MUS 2542	Music Performance-Private Instruction II	2		
Major ensemble ²		2		
University core course		3		
Summer				
University core course		3		
Third Year				
Fall				
MUS 3162	Composition III	2		
MUS 3213 or 3223	Music in Civilization I (or Music in Civilization II)	3		
MUS 3532	Music Performance-Private Instruction III	2		
Upper-level music theory/history course		3		
MUS 4581	Chamber Music	1		
Elective		3		
University core course		3		
Spring				
MUS 3162	Composition III	2		
MUS 3223 or 3213	Music in Civilization II (or Music in Civilization I)	3		
MUS 3532	Music Performance-Private Instruction III	2		
Upper-level music theory/history course		3		
MUS 4581	Chamber Music	1		
University core course		3		
Fourth Year				
Fall				
MUS 3413	Psychology of Music	3		
Upper-level music theory/history course		3		
MUS 4142	Composition IV	2		
MUS 4581	Chamber Music ²	1		
Elective		3		
University core course		3		
Spring				
MUS 3013 or 3123	Digital Music Production (or Introduction to Electronic and Computer Music)	3		
Upper-level music theory/history course		3		
MUS 4142	Composition IV	2		
MUS 4561	Senior Recital	1		
Elective		3		
University core course		3		
Total Credit Hours:				130.0
¹ Keyboard principals will substitute one semester of MUS 1552 and two credits selected from MUS 1511, MUS 1512, and MUS 1531.				
² Special degree requirement. Not counted in total degree hours.				
Music Performance Emphasis				
All candidates for this emphasis must fulfill the music degree requirements (47 hours), as well as the course requirements necessary for this emphasis (44 hours).				
A. Required music performance courses				
1. Private Instruction in principal instrument (this is in addition to the 14 hours of Private Instruction in the music degree requirements):				
MUS 4543	Music Performance-Private Instruction V (2 semesters)	6		
2. Approved secondary instrument(s)				
3. Select 8 semester credit hours of ensemble courses as assigned by the ensemble directors, as outlined in the Department of Music Student Handbook				
B. Digital Music Production				
MUS 3013	Digital Music Production (Required for all music performance majors except voice principals)	3		
C. Approved upper-level music theory courses				
Select 6 semester credit hours of approved upper-level music theory courses from the following. Wind, percussion, and string principals must choose MUS 3143 Orchestration.				
MUS 3133	Analysis of Twentieth-Century Music			
MUS 3143	Orchestration			
MUS 4113	Counterpoint			
MUS 4163	Topics in Music Theory			
D. Approved music literature courses in the student's principal performance area				
Select 4 semester credit hours of approved music literature courses in the student's principal performance area				

E. Approved music pedagogy courses in the student’s principal performance area

Select 2 semester credit hours of approved music pedagogy courses in the student’s principal performance area 2

F. Free electives

For all music performance emphasis students except voice principals, 12 semester credit hours of free electives are required. Vocal Principals are required to use these 12 semester credit hours to satisfy the diction and language requirements as detailed in the Department of Music Student Handbook. 12

G. Students electing the Performance emphasis must be approved by the appropriate qualifying committee for approval to pursue the emphasis at the upper-division level; requirements for each area are specified in the Department of Music Student Handbook

H. A senior recital approximately one hour in length must be presented and approved by the appropriate recital committee

MUS 4561 Senior Recital 1

Total Credit Hours 44

Course Sequence Guide for a B.M. with Performance Emphasis

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Music in Performance (Orchestral Instrument) – Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1	1
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band)	2
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2	1
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band)	2

WRC 1023 Freshman Composition II (Q) (core) 3
 University core math course 3

Summer

University core course 3

Second Year

Fall

MUS 2102 Aural Skills III 2
 MUS 2152 Basic Skills of Music III 2
 MUS 2403 Conducting I 3
 MUS 2421 Class Piano 3 1
 MUS 2542 Music Performance-Private Instruction II 2
 MUS 3762, 3742, 3752, or 3731 UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) 2
 University core course 3

Spring

MUS 2112 Aural Skills IV 2
 MUS 2162 Basic Skills of Music IV 2
 MUS 2243 World Music in Society (core) 3
 MUS 2521 Class Piano 4 1
 MUS 2542 Music Performance-Private Instruction II 2
 MUS 3762, 3742, 3752, or 3731 UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) 2
 University core course 3

Summer

University core course 3
 University core course 3

Third Year

Fall

MUS 3013 Digital Music Production 3
 MUS 3213 or 3223 Music in Civilization I (or Music in Civilization II) 3
 MUS 3543 Music Performance-Private Instruction IV 3
 MUS 3762, 3742, 3752, or 3731 UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) ¹ 2
 MUS 4581 Chamber Music ¹ 1
 University core course 3

Spring

MUS 3143 Orchestration 3
 MUS 3223 or 3213 Music in Civilization II (or Music in Civilization I) 3
 MUS 3543 Music Performance-Private Instruction IV 3
 MUS 3762, 3742, 3752, or 3731 UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) ¹ 2
 University core course 3

Summer

University core course 3

Fourth Year

Fall

MUS 3342 or 3352	Wind and Percussion Literature for Performance Majors (or Literature for String Performance Majors)	2
MUS 3413	Psychology of Music	3
MUS 4532	Music Pedagogy (Strings or Wind/Percussion)	2
MUS 4543	Music Performance-Private Instruction V	3
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) ¹	2
Elective		3

Spring

MUS 3342 or 3352	Wind and Percussion Literature for Performance Majors ^{or Literature for String Performance Majors}	2
MUS 4543	Music Performance-Private Instruction V	3
Upper-level music theory course		3
MUS 4561	Senior Recital	1
MUS 3762, 3742, 3752, or 3731	UTSA Orchestra (or UTSA Wind Ensemble, UTSA Symphonic Band, UTSA University Band) ¹	2
University core course		3

Total Credit Hours: 130.0

¹ Special degree requirement. Credit hours may be counted toward electives.

Bachelor of Music in Performance (Keyboard) – Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1531	Class Voice	1
WRC 1013	Freshman Composition I (Q) (core)	3
Major ensemble		1
Spring		
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
WRC 1023	Freshman Composition II (Q) (core)	3
University core math course		3
Major ensemble		2
Summer		
University core course		3

Second Year

Fall

MUS 1511	Music Performance-Secondary Instrument	1
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2403	Conducting I	3
MUS 2501	Accompanying	1
MUS 2542	Music Performance-Private Instruction II	2
University core course		3

Spring

MUS 1552	Functional Piano for Keyboard Principals	2
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society (core)	3
MUS 2501	Accompanying	1
MUS 2542	Music Performance-Private Instruction II	2
University core course		3
Summer		
University core course		3
University core course		3

Third Year

Fall

MUS 2501	Accompanying	1
MUS 3013	Digital Music Production	3
MUS 3213 or 3223	Music in Civilization I (or Music in Civilization II)	3
MUS 3322	Keyboard Literature	2
MUS 3543	Music Performance-Private Instruction IV	3
University core course		3

Spring

MUS 2501	Accompanying	1
Upper-level theory course		3
MUS 3223 or 3213	Music in Civilization II (or Music in Civilization I)	3
MUS 3322	Keyboard Literature	2
MUS 3543	Music Performance-Private Instruction IV	3
Elective		3
Summer		
University core course		3

Fourth Year

Fall

MUS 3413	Psychology of Music	3
MUS 4532	Music Pedagogy	2
MUS 4543	Music Performance-Private Instruction V	3
MUS 4581	Chamber Music	1
Elective		3
University core course		3

Spring

Upper-level theory course		3
MUS 4543	Music Performance-Private Instruction V	3
MUS 4561	Senior Recital	1
Elective		3
Elective		3
University core course		3

Total Credit Hours: 130.0

Bachelor of Music in Performance (Voice) – Four-Year Academic Plan

First Year**Fall** **Credit Hours**

AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1	1
MUS 3511	Diction for Singers	1
MUS 3712 or 3722	Concert Choir (or Women's Choir)	2
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2	1
MUS 3511	Diction for Singers	1
MUS 3712 or 3722	Concert Choir (or Women's Choir)	2
WRC 1023	Freshman Composition II (Q) (core)	3
University core math course		3

Summer

University core course		3
University core course		3

Second Year**Fall**

MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2243	World Music in Society (core)	3
MUS 2421	Class Piano 3	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3511	Diction for Singers	1
MUS 3712 or 3722	Concert Choir (or Women's Choir)	2
University core course		3

Spring

MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2403	Conducting I	3
MUS 2521	Class Piano 4	1

MUS 2542	Music Performance-Private Instruction II	2
MUS 3511	Diction for Singers	1
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
University core course		3

Summer

University core course		3
University core course		3

Third Year**Fall**

MUS 3213 or 3223	Music in Civilization I (or Music in Civilization II)	3
MUS 3543	Music Performance-Private Instruction IV	3
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
MUS 4531	Vocal Pedagogy I	1
ITL 1014, FRN 1014, or GER 1014	Elementary Italian I (or Elementary French I, Elementary German I)	4
University core course		3

Spring

MUS 3223 or 3213	Music in Civilization II (or Music in Civilization I)	3
MUS 3413	Psychology of Music	3
MUS 3543	Music Performance-Private Instruction IV	3
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
MUS 4541	Vocal Pedagogy II	1
University core course		3

Summer

University core course		3
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Fourth Year**Fall**

MUS 3292	Operatic Literature	2
Upper-level music theory course		3
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
MUS 3792	Lyric Theatre	2
MUS 4543	Music Performance-Private Instruction V	3
FRN 1014, ITL 1014, or GER 1014	Elementary French I (or Elementary Italian I, Elementary German I)	4

Spring

MUS 3282	Vocal Literature	2
Upper-level theory course		3
MUS 3712 or 3722	Concert Choir (or Women's Choir) ¹	2
MUS 4543	Music Performance-Private Instruction V	3
MUS 4561	Senior Recital	1
FRN 1024, GER 1024, or ITL 1024	Elementary French II (or Elementary German II, Elementary Italian II)	4

Total Credit Hours: 130.0

¹ Special degree requirement. Not included in total degree hours.

Bachelor of Music in Performance (Guitar) – Four-Year Academic Plan

First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
MUS 1102 Aural Skills I	2
MUS 1112 Basic Skills of Music I	2
MUS 1512 Music Performance-Private Instruction	2
MUS 1521 Class Piano 1	1
WRC 1013 Freshman Composition I (Q) (core)	3
Major ensemble	2

Spring

MUS 1122 Aural Skills II	2
MUS 1132 Basic Skills of Music II	2
MUS 1542 Music Performance-Private Instruction I	2
MUS 1621 Class Piano 2	1
WRC 1023 Freshman Composition II (Q) (core)	3
University core math course	3
Major ensemble	2

Summer

University core course	3
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Second Year

Fall

MUS 2102 Aural Skills III	2
MUS 2152 Basic Skills of Music III	2
MUS 2232 Introduction to Guitar Literature	2
MUS 2421 Class Piano 3	1
MUS 2542 Music Performance-Private Instruction II	2
Major ensemble	2
University core course	3

Spring

MUS 2112 Aural Skills IV	2
MUS 2162 Basic Skills of Music IV	2
MUS 2243 World Music in Society (core)	3
MUS 2521 Class Piano 4	1
MUS 2542 Music Performance-Private Instruction II	2
Major ensemble	2
University core course	3

Summer

University core course	3
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Third Year

Fall

MUS 2403 Conducting I	3
MUS 3213 or 3223 Music in Civilization I (or Music in Civilization II)	3
MUS 3332 Advanced Guitar Literature	2

MUS 3543 Music Performance-Private Instruction IV	3
MUS 4581 Chamber Music ¹	1
University core course	3

Spring

MUS 3223 or 3213 Music in Civilization II (or Music in Civilization I)	3
Upper-level theory course	3
MUS 3543 Music Performance-Private Instruction IV	3
MUS 4581 Chamber Music ¹	1
Elective	3
University core course	3

Summer

University core course	3
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Fourth Year

Fall

MUS 3013 Digital Music Production	3
Upper-level theory course	3
MUS 4532 Music Pedagogy	2
MUS 4543 Music Performance-Private Instruction V	3
Elective	3
University core course	3

Spring

MUS 3413 Psychology of Music	3
MUS 4543 Music Performance-Private Instruction V	3
MUS 4561 Senior Recital	1
MUS 4581 Chamber Music ¹	1
Elective	3
University core course	3

Total Credit Hours: 130.0

¹ Special degree requirement. Credit hours may be counted toward electives.

Music Marketing Emphasis

All candidates for this emphasis must fulfill the Music Degree Requirements (45 hours), as well as the course requirements necessary for this emphasis (46 hours).

A. Required music performance courses

1. Approved secondary instrument(s)	2
2. Select 8 semester credit hours of ensemble coursework as assigned by the ensemble directors, as outlined in the Department of Music Student Handbook	8

B. Required music marketing courses

1. Music marketing introductory course	
MUS 2263 Introduction to the Music Industry	3
or MUS 2273 Introduction to Music Nonprofit Organizations	
2. Required music marketing courses:	
MUS 3613 Entrepreneurship in Music	3
MUS 4803 Seminar in Music Marketing	3

MUS 4933 Music Marketing Internship 3

C. Select 24 credits of approved business, music, music technology, or music marketing courses

At least 12 hours of which must be outside of music. Except for ACC 2013, ECO 2013, and ECO 2023, these must be upper-level courses. A list of suggested courses that fulfill this part of the degree is available in the Department of Music Student Handbook. ¹ 24

D. Students electing the Music Marketing emphasis must interview with the Music Marketing Committee for approval to pursue the emphasis at the upper-division level

Total Credit Hours 46

¹ The College of Business sets prerequisites for all business coursework and changes prerequisites at its discretion. Business prerequisites are not necessarily included in this degree plan either as part of the academic core or the music marketing coursework. Consequently, before planning to take a specific business class, students should consult the catalog and meet with their advisor to determine whether they have met the prerequisites for that class.

Course Sequence Guide for B.M. with a Music Marketing Emphasis

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Music in Music Marketing – Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
WRC 1013	Freshman Composition I (Q) (core)	3
Major ensemble		2
Spring		
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
WRC 1023	Freshman Composition II (Q) (core)	3
Major ensemble		2
University core math course		3
Summer		

University core course 3

Second Year

Fall

MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2243	World Music in Society (core)	3
MUS 2263 or 2273	Introduction to the Music Industry	3
MUS 2421	Class Piano 3 ¹	1
MUS 2542	Music Performance-Private Instruction II	2

Major ensemble 2

Spring

MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2403	Conducting I	3
MUS 2521	Class Piano 4 ¹	1
MUS 2542	Music Performance-Private Instruction II	2

Major ensemble ² 2

University core course 3

Summer

University core course 3

Third Year

Fall

MUS 3213 or 3223	Music in Civilization I (or Music in Civilization II)	3
MUS 3532	Music Performance-Private Instruction III	2

Major ensemble ² 2

Approved business or music course 3

Approved business or music course 3

University core course 3

Spring

MUS 3223 or 3213	Music in Civilization II (or Music in Civilization I)	3
MUS 3532	Music Performance-Private Instruction III	2
MUS 3613	Entrepreneurship in Music	3

Major ensemble ² 2

Approved business or music course 3

Approved business or music course 3

Summer

University core course 3

Fourth Year

Fall

MUS 3413	Psychology of Music	3
MUS 4581	Chamber Music	1

Approved business or music course 3

Approved business or music course 3

University core course 3

University core course 3

Spring

MUS 4581	Chamber Music (or major ensemble)	1
MUS 4803	Seminar in Music Marketing	3
Approved business or music course		3
Approved business or music course		3
University core course		3
University core course		3
Summer		
MUS 4933	Music Marketing Internship	3
Total Credit Hours:		130.0

- 1 Keyboard principals will substitute one semester of MUS 1552 and two credits hours selected from MUS 1511, MUS 1512, and MUS 1531.
- 2 Special degree requirement. Not included in total degree hours.

Bachelor of Arts Degree in Music

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the music degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Music must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both a degree requirement and a Core Curriculum requirement; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MUS 2243 should be used to satisfy the core requirement in Creative Arts as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Arts degree in Music must successfully complete the following Gateway Courses in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MUS 1102	Aural Skills I
MUS 1112	Basic Skills of Music I

Music Degree Requirements

All candidates for the Bachelor of Arts degree in Music must complete the following 30 semester credit hours of required music courses. (Note that MUS 2243 World Music in Society should be used to satisfy Core Curriculum requirements in Creative Arts):

MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 2001	Concert Music (2 semesters)	2
MUS 2102	Aural Skills III	2
MUS 2112	Aural Skills IV	2
MUS 2152	Basic Skills of Music III	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society	3
MUS 3013	Digital Music Production	3
MUS 3213	Music in Civilization I	3
MUS 3223	Music in Civilization II	3
Total Credit Hours		30

A. Select 6 semester credit hours of the following music literature and culture courses

MUS 2232	Introduction to Guitar Literature
MUS 2263	Introduction to the Music Industry
MUS 2273	Introduction to Music Nonprofit Organizations
MUS 2633	American Roots Music
MUS 2663	History and Styles of Jazz
MUS 2673	History and Styles of Rock
MUS 2693	The Music of Latin America and the Caribbean
MUS 2743	Music and Film
MUS 3232	Wind and Percussion Literature
MUS 3242	String Literature
MUS 3252	Topics in Music Literature
MUS 3263	Music Since 1900
MUS 3272	Choral Literature
MUS 3282	Vocal Literature
MUS 3292	Operatic Literature
MUS 3322	Keyboard Literature
MUS 3332	Advanced Guitar Literature
MUS 3413	Psychology of Music
MUS 3613	Entrepreneurship in Music
MUS 4163	Topics in Music Theory

B. Select 9 semester credit hours of music theory, analysis, and technology courses, of which 6 semester credit hours must be at the upper-division level:

MUS 2132	Introduction to Improvisation
MUS 2183	Jazz Skills
MUS 2403	Conducting I
MUS 3103	Audio Technology I
MUS 3123	Introduction to Electronic and Computer Music
MUS 3133	Analysis of Twentieth-Century Music
MUS 3143	Orchestration
MUS 3153	Conducting II
MUS 3163	Audio Technology II
MUS 4113	Counterpoint
MUS 4153	Audio Technology III
MUS 4163	Topics in Music Theory
MUS 4183	Jazz Composition and Arranging

MUS 4433 Multimedia Production

C. Select 10-14 semester credit hours of music performance courses 10-14 as follows:

MUS 1521 Class Piano 1
MUS 1621 Class Piano 2

(Keyboard Principals must take MUS 1552 Functional Piano for Keyboard Principals.)

Private Instruction (4 semester credit hours)

MUS 1512 Music Performance-Private Instruction
MUS 1542 Music Performance-Private Instruction I

Ensemble (4-8 semester credit hours)

Four semesters as assigned by the ensemble directors, to include at least two semesters of Directed Ensemble (1–2 hours per semester). Details for ensemble requirements are listed in the Department of Music Student Handbook.

D. Electives

Select 22-26 semester credit hours of non-music electives, of which 22-26 6 semester credit hours must be at the upper-division level. Courses are chosen in consultation with the student's advisor.

Total Credit Hours **47-55**

Course Sequence Guide for B.A. in Music

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Arts in Music – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
WRC 1013	Freshman Composition I (Q) (core)	3
Major ensemble		2
Spring		
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
WRC 1023	Freshman Composition II (Q) (core)	3
Major ensemble		2
University core math course		3

Second Year

Fall

MUS 2001	Concert Music	1
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2243	World Music in Society (core and major)	3
Major ensemble		2
University core course		3
University core course		3

Spring

MUS 2001	Concert Music	1
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 3013	Digital Music Production	3
Non-music elective		3
University core course		3

Third Year

Fall

MUS 3213 or 3223	Music in Civilization I (or Music in Civilization II)	3
Music theory/analysis/tech course		3
Non-music elective		3
Non-music elective		3
University core course		3

Spring

MUS 3223 or 3213	Music in Civilization II (or Music in Civilization I)	3
Music literature/culture course		3
Music theory/analysis/tech course		3
Non-music elective		3
University core course		3

Fourth Year

Fall

Music Theory/Analysis/Technology course		3
Non-music elective		3
Non-music elective		3
University core course		3
University core course		3

Spring

Music Theory/Analysis/Technology course		3
Non-music elective		3
Non-music elective		3
University core course		3
University core course		3

Total Credit Hours: 120.0

¹ Keyboard principals will substitute one semester of MUS 1552.

- Minor in Dance (p. 173)
- Minor in Music (p. 173)

Minor in Dance

All students pursuing the Minor in Dance must complete 21 semester credit hours of dance:

A. Required courses:

DAN 1013	Ballet I	3
DAN 1113	Introduction to Modern Dance	3
DAN 2003	Introduction to Dance	3
DAN 2013	Ballet II	3
or DAN 2113	Modern Dance II	
DAN 2213	Jazz and Musical Theater Dance	3

B. Select two of the following courses:

DAN 3013	Ballet III	
or DAN 3113	Modern Dance III	
DAN 3103	History of Dance	

Total Credit Hours **21**

DAN 2783 Topics in Dance may be used for an approved substitution to DAN 2013, DAN 2213 or DAN 2113.

Minor in Music

To declare a Minor in Music, students must first interview with a Music Department advisor.

All students pursuing the Minor in Music must complete 21 semester credit hours. Students with little or no prior experience with music performance or notation should take MUS 2623 Fundamentals of Music for the Non-Music Major before declaring the music minor and enrolling in MUS 1102 Aural Skills I and MUS 1112 Basic Skills of Music I.

A. Music theory courses

MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2

B. Select 3 semester credit hours of the following:

MUS 1521	Class Piano 1	
MUS 1531	Class Voice	
MUS 1621	Class Piano 2	
MUS 2183	Jazz Skills	
MUS 2243	World Music in Society	
MUS 2263	Introduction to the Music Industry	
MUS 2273	Introduction to Music Nonprofit Organizations	
MUS 2403	Conducting I	
MUS 2603	Beginning Guitar	
MUS 2613	Intermediate Guitar	
MUS 2633	American Roots Music	
MUS 2663	History and Styles of Jazz	
MUS 2673	History and Styles of Rock	
MUS 2683	Masterpieces of Music	
MUS 2693	The Music of Latin America and the Caribbean	
MUS 2743	Music and Film	

C. Select 6 semester credit hours of the following:

MUS 3013	Digital Music Production	
MUS 3103	Audio Technology I	

MUS 3123	Introduction to Electronic and Computer Music	
MUS 3453	Teaching Elementary Music	
MUS 3523	Music and the Internet	
MUS 3613	Entrepreneurship in Music	
D. Two semesters (a minimum of 2 semester credit hours) of Music Ensemble, as assigned		2
F. Concert Music		
MUS 2001	Concert Music (2 semesters)	2
Total Credit Hours		21

- Certificate in Jazz Studies (p. 173)
- Certificate in Music Technology (p. 173)

Certificate in Jazz Studies

The Certificate in Jazz Studies is intended for music majors who have an interest in jazz performance, improvisation and arranging, and who are pursuing an undergraduate degree in music. The Certificate is granted upon graduation from the University.

Students pursuing the Certificate in Jazz Studies must complete a minimum of 16 semester credit hours, including the following courses:

MUS 2132	Introduction to Improvisation	2
MUS 2183	Jazz Skills	3
MUS 2663	History and Styles of Jazz	3
MUS 3583	Advanced Improvisation	3
MUS 3771	Jazz Ensemble (1 hour per semester, may be repeated for credit)	1
MUS 4183	Jazz Composition and Arranging	3
MUS 4581	Chamber Music (Jazz combo) (1 hour per semester, may be repeated for credit)	1

Total Credit Hours **16**

Certificate in Music Technology

The Certificate in Music Technology is designed primarily for UTSA students who have an active interest in music technology and are currently pursuing an undergraduate or graduate degree in any UTSA discipline. Students in disciplines outside of music will be accepted into the program with approval from the program director. The Certificate is granted upon graduation from the University.

Students can declare their intention to participate in the certificate program at any time before or during the first two courses, MUS 3013 Digital Music Production or MUS 3103 Audio Technology I. Acceptance is provisional. Exemplary performance in these two courses is required to continue with full acceptance in the upper level of the program. At that point, certificate students begin to receive more individualized training and attention in the remaining courses.

All students pursuing the Certificate in Music Technology must complete the following 16 semester credit hours. Substitutions must be approved by the Music Technology Committee.

MUS 3013	Digital Music Production	3
MUS 3103	Audio Technology I	3
MUS 3123	Introduction to Electronic and Computer Music	3
MUS 3163	Audio Technology II	3
MUS 4433	Multimedia Production	3

MUS 4961	Music Technology Project	1
Total Credit Hours		16

Department of Philosophy and Classics

The Department of Philosophy and Classics offers Bachelor of Arts degrees in Classical Studies and Humanities, Medical Humanities, and Philosophy. Students majoring in Medical Humanities may select a concentration in Pre-Medicine or Health Careers. Minors are offered in Classical Studies, Humanities, Philosophy, and Religious Studies. Honors may be earned in Classical Studies and Humanities, and Philosophy.

Honors in Classical Studies and Humanities

Students whose grade point average in the Classical Studies and Humanities major before the beginning of their final year at UTSA is 3.25 or above, and whose overall grade point average is 3.0, may earn Honors in Classical Studies and Humanities. To do so, a student must complete a substantial paper approved by the Department Scholarship and Honors Committee and maintain a 3.25 grade point average in the major. The grade point average requirements apply to all transfer work as well as all courses taken at UTSA.

Honors in Philosophy

Students whose grade point average in the philosophy major before the beginning of their final year at UTSA is 3.25 or above, and whose overall grade point average is 3.0, may earn Honors in Philosophy. To do so, a student must complete a substantial paper approved by the Department Scholarship and Honors Committee and maintain a 3.25 grade point average in the major. The grade point average requirements apply to all transfer work as well as all courses taken at UTSA.

- Bachelor of Arts Degree in Classical Studies and Humanities (p. 174)
- Bachelor of Arts Degree in Medical Humanities (p. 176)
- Bachelor of Arts Degree in Philosophy (p. 180)

Bachelor of Arts Degree in Classical Studies and Humanities

The Bachelor of Arts degree in Classical Studies and Humanities is an interdisciplinary degree program that provides students with a foundation in the history of humanistic disciplines and also affords the opportunity to focus on particular periods and intellectual trends. In completing the degree, students must declare either a Classical Studies emphasis, which focuses on the language, literature and culture of ancient Greece and Rome as foundational to humanistic studies, or a general Humanities emphasis, which offers a synoptic view of the history of ideas and the opportunity to study the reception of these traditions within a broader range of historical periods. The minimum number of semester credit hours required for this degree is 120, including the hours of the Core Curriculum requirements. For either emphasis, 39 of the total semester credit hours required for the degree must be at the upper-division level (3000- and 4000-level), 18 of which must be earned in upper-division UTSA courses.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Classical Studies and Humanities must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Common Core

CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
PHI 2023	Introduction to Ancient Philosophy	3
CLA 4973	Senior Seminar in Classics	3
or HUM 4973	Senior Seminar in Humanities	

B. Language Component

Select one of the following emphases: 6-8

Classical Studies Emphasis:

LAT 1114 Introductory Latin I (or equivalent)
or GRK 1114 Introductory Classical Greek I

LAT 1124 Introductory Latin II (or equivalent)
or GRK 1124 Introductory Classical Greek II

Humanities Emphasis:

Select 6 semester hours in a language other than English

C. Discipline Core

Select one of the following emphases: 18

Classical Studies Emphasis:

GRK 2113 Intermediate Classical Greek I
or LAT 2113 Intermediate Latin I

Five prescribed electives from the following list (three courses must be 3000-level or higher):

CLA 2033	Introduction to Classical Literature
CLA 2323	Classical Mythology
CLA 2953	Topics for the Study of the Ancient Mediterranean
CLA 3023	Classical Myths and Literature
CLA 3053	Topics in Classical Genres
CLA 3063	Topics in the Art and Architecture of the Classical World
CLA 3123	Cultural Issues in Classical Antiquity
CLA 3513	Topics in Classical History
CLA 4913	Independent Study
CLA 4953	Special Studies in Classics

FL 3043 Individualized Instruction in Advanced-Level Language (provided the instruction is in Latin or Greek; may be repeated as often as subject matter varies)

HUM 2093 World Religions

HUM 3023	The Medieval World
HUM 3043	Classicism and Enlightenment
Humanities Emphasis:	
HUM 2093	World Religions
HUM 3013	History of Ideas
Four courses in approved historical periods selected from the following (three of which must be at the 3000-level or higher):	
CLA 3123	Cultural Issues in Classical Antiquity
CLA 3513	Topics in Classical History
HUM 2023	Introduction to the Humanities I
HUM 2033	Introduction to the Humanities II
HUM 2053	History of Film
HUM 3023	The Medieval World
HUM 3033	Renaissance Ideas
HUM 3043	Classicism and Enlightenment
HUM 3053	The Romantic Age
HUM 3063	The Modern World

D. Advanced Support Work

40-42 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of Philosophy. Recommended disciplines for the Classics emphasis include: Architecture; Language, Literature, and Humanities; History and Theory of Art and Music. Recommended disciplines for the Humanities emphasis include: Mathematics and Natural Sciences; Social and Behavioral Sciences; Language, Literature, and Humanities; History and Theory of Art and Music; Architecture.

Total Credit Hours **76-80**

Course Sequence Guide for B.A. Degree in Classical Studies and Humanities

This course sequence guide is designed to assist students in completing their UTSA undergraduate Classical Studies and Humanities degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Classical Studies and Humanities, Classical Studies Emphasis – Four-Year Academic Plan

First Year

	Credit Hours
Fall	
HIS 1043, 1053, or 2053	3
LAT 1114 or GRK 1114	4
WRC 1013	3
Mathematics core	3
Life & Physical Sciences core	3

Spring

AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
LAT 1124 or GRK 1124	Introductory Latin II or Introductory Classical Greek II (level II)	4
WRC 1023	Freshman Composition II (Q) (core)	3
	Life & Physical Sciences core	3

Second Year

Fall

CLA 2013	Introduction to Ancient Greece	3
ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
POL 1013	Introduction to American Politics (core)	3
	Free elective (GRK 2113 or LAT 2113)	3
	Language, Philosophy & Culture core	3

Spring

CLA 2023	Introduction to Ancient Rome	3
PHI 2023	Introduction to Ancient Philosophy	3
POL 1133 or 1213	Texas Politics and Society (core)	3
	Free elective	3
	Creative Arts core	3

Third Year

Fall

LAT 2113 or GRK 2113	Intermediate Latin I (or Intermediate Classical Greek I)	3
	Upper-division CLA, HUM, or FL elective	3
	Upper-division free elective	3
	Upper-division support work	3
	Component Area Option core	3

Spring

	CLA, HUM, or FL elective	3
	CLA, HUM, or FL elective	3
	Free elective	3
	Upper-division free elective	3
	Upper-division support work	3

Fourth Year

Fall

	Free elective	3
	Upper-division CLA, HUM, or FL elective	3
	Upper-division CLA, HUM, or FL elective	3
	Upper-division free elective	3
	Upper-division support work	3

Spring

CLA 4973	Senior Seminar in Classics	3
	Free elective	1
	Upper-division free elective	3
	Upper-division free elective	3

Upper-division support work	3
Total Credit Hours:	120.0

B.A. in Classical Studies and Humanities, Humanities Emphasis – Four-Year Academic Plan

First Year

Fall	Credit Hours	
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Foreign language (semester I)		3-4
Mathematics core		3
Life & Physical Sciences core		3

Spring

AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Foreign language (semester II)		3-4
Life & Physical Sciences core		3

Second Year

Fall	Credit Hours	
CLA 2013	Introduction to Ancient Greece	3
HUM 2093	World Religions	3
CLA 3123, 3513, HUM 3023, HUM 3033, HUM 3043, HUM 3053, or HUM 3063	Cultural Issues in Classical Antiquity	3
POL 1013	Introduction to American Politics (core)	3
Language, Philosophy & Culture core		3

Spring

CLA 2023	Introduction to Ancient Rome	3
HUM 3013	History of Ideas	3
CLA 3123, 3513, HUM 3023, HUM 3033, HUM 3043, HUM 3053, or HUM 3063	Cultural Issues in Classical Antiquity	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Creative Arts core		3

Third Year

Fall	Credit Hours	
ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3

CLA 3123, 3513, HUM 3023, HUM 3033, HUM 3043, HUM 3053, or HUM 3063	Cultural Issues in Classical Antiquity	3
PHI 2023	Introduction to Ancient Philosophy	3
Free elective		3
Upper-division free elective		3
Spring		
CLA, PHI, HUM, or Literature elective ¹		3
CLA, PHI, HUM, or Literature elective ¹		3
Free elective		3
Upper-division free elective		3
Component Area Option core		3
Fourth Year		
Fall		
CLA 3123, 3513, HUM 3023, HUM 3033, HUM 3043, HUM 3053, or HUM 3063	Cultural Issues in Classical Antiquity	3
CLA, PHI, HUM, or Literature elective ¹		3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3
Spring		
HUM 4973	Senior Seminar in Humanities	3
CLA, PHI, HUM, or Literature elective ¹		3
Free elective		3
Free elective (to meet 120 hour minimum)		1-3
Upper-division free elective		3
Total Credit Hours:		120.0

¹ 9 of these hours must be upper-division.

Bachelor of Arts Degree in Medical Humanities

The Bachelor of Arts degree in Medical Humanities is an interdisciplinary degree drawing upon the natural sciences, social sciences, humanities, and arts disciplines to prepare students for careers in medicine and health within a competency-based framework that promotes the interpretation of human factors associated with illness and wellness.

The degree offers two concentrations. The Pre-Medicine Concentration meets typical application requirements for American medical and dental schools. The Health Careers Concentration prepares graduates for a wide variety of health-related careers.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Medical Humanities must fulfill University Core Curriculum requirements in the same manner as

other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Bachelor of Arts Degree in Medical Humanities with a Pre-Medicine Concentration

The minimum number of semester credit hours required for this degree is 120, including the hours of Core Curriculum requirements. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must complete the following degree requirements in addition to the Core Curriculum requirements.

Degree Requirements

A. 83 semester credit hours, 27 of which must be at the upper-division level:

1. 47 semester credit hours of required courses in science and mathematics: 47

BIO 1404	Biosciences I (Satisfies one of the Life and Physical Sciences Core Curriculum requirements.)	
BIO 1414	Biosciences II (Satisfies one of the Life and Physical Sciences Core Curriculum requirements.)	
BIO 2313	Genetics	
BIO 3513	Biochemistry	
BIO 3813	Cell Biology	
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	
CHE 3643	Organic Chemistry II	
MAT 1073	Algebra for Scientists and Engineers (This course may be used to satisfy the Core Curriculum requirement in Mathematics.)	
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
STA 1053	Basic Statistics (This course may be used to satisfy the Core Curriculum requirement in Mathematics.)	
2. 6 semester credit hours in medical humanities:		6
MHU 2013	Introduction to Medical Humanities	
MHU 4813	Seminar in Medical Humanities	
3. 15 semester credit hours of elective in social and behavioral sciences, 9 of which must be upper-division, and 3 from the core curriculum, chosen from the following:		15
ANT 2033	Introduction to Biological Anthropology	

ANT 2053	Introduction to Cultural Anthropology (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)	
ANT 2063	Language, Thought, and Culture (This course may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture.)	
ANT 3513	The Human Skeleton	
ANT 3523	Medical Anthropology	
ANT 3883	Death and Dying	
BIO 1033	Drugs and Society	
BIO 3613	The Biology of Aging	
GRG 3443	Medical Geography	
HTH 2413	Introduction to Community and Public Health (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)	
HTH 2513	Personal Health (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)	
PSY 2073	Statistics for Psychology	
PSY 3023	Social Psychology of Small Groups	
PSY 3513	Developmental Psychopathology	
PSY 3523	Psychology of Adulthood and Aging	
PSY 3543	Introduction to Clinical Psychology	
PSY 4253	Psychology of Health	
SOC 1043	Introduction to Public Health	
SOC 2023	Social Context of Drug Use (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)	
SOC 3203	Gerontology	
SOC 3213	Medical Sociology	
SOC 4043	Global Health	
SOC 4053	Health Care System	
SOC 4073	Social and Behavioral Theories in Public Health	
SOC 4683	Health Disparities	
4. 15 additional semester credit hours of electives in arts and humanities, 9 of which must be upper-division and 3 from the core curriculum (selected from a different component area than above), chosen from the following:		15
AHC 4333	Topics in Art History and Criticism	
ART 1103	Introduction to Visual Arts (This course may be used to satisfy the Core Curriculum requirement in Creative Arts.)	
ART 3223	Drawing: Figure	
BBL 3043	Social Psychological Considerations in Mexican American Communities	
CLA 2953	Topics for the Study of the Ancient Mediterranean (when topic is Medical Roots)	
COM 3293	Health Communication	
COM 3383	Interpersonal Communication	
CSH 3823	Advanced Topics in World Cultures	
DAN 1113	Introduction to Modern Dance	
ENG 2413	Technical Writing	
ENG 3383	Writing in Public, Professional, and Workplace Contexts	

ENG 4433	Advanced Professional Writing
HIS 3453	History of Medicine in America
HUM 2023	Introduction to the Humanities I (This course may be used to satisfy the Core Curriculum requirement in Creative Arts.)
HUM 2033	Introduction to the Humanities II (This course may be used to satisfy the Core Curriculum requirement in Creative Arts.)
PHI 2043	Introductory Logic (This course may be used to satisfy the Core Curriculum requirement in the Component Area Option.)
PHI 2123	Contemporary Moral Issues (This course may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture.)
PHI 3013	Philosophy of Religion
PHI 3033	Philosophy of Science
POL 3303	Race, Ethnicity and Public Policy
SOC 3043	Race and Ethnic Relations

Internship and Independent Study courses in the participating disciplines may also be applied to satisfy this requirement when the approved coursework is preparatory to careers in medicine and health. Students are encouraged to include independent studies and internships in their degree plans, but only 6 hours of independent study or internship will apply to the degree.

B. 13 semester credit hours of free electives, 9 of which must be upper division 13

Total Credit Hours 96

Note: Any Core Curriculum course may be used to satisfy the Component Area Option requirement.

Medical Humanities majors are encouraged to study one or more ancient or modern languages other than English through elective coursework.

Bachelor of Arts Degree in Medical Humanities with a Health Careers Concentration

The Bachelor of Arts Degree in Medical Humanities with a Health Careers Concentration prepares graduates for a wide variety of health-related careers.

The minimum number of semester credit hours required for this degree is 120, including the hours of Core Curriculum requirements. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must complete the following degree requirements in addition to the Core Curriculum requirements.

Degree Requirements

A. 73 semester credit hours, of which 27 must be at the upper-division level:

1. 25 semester credit hours of required courses in science and mathematics: 25

BIO 1404	Biosciences I (Satisfies one of the Life and Physical Sciences Core Curriculum requirements.)
BIO 1414	Biosciences II (Satisfies one of the Life and Physical Sciences Core Curriculum requirements.)

BIO 2313	Genetics
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory
MAT 1073	Algebra for Scientists and Engineers (This course may be used to satisfy the Core Curriculum requirement in Mathematics.)
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory
STA 1053	Basic Statistics (This course may be used to satisfy the Core Curriculum requirement in Mathematics.)
2. 6 semester credit hours in medical humanities: 6	
MHU 2013	Introduction to Medical Humanities
MHU 4813	Seminar in Medical Humanities
3. 21 semester credit hours in social and behavioral sciences, 12 of which must be upper-division and 3 from the core curriculum, chosen from the following: 21	
ANT 2033	Introduction to Biological Anthropology
ANT 2053	Introduction to Cultural Anthropology (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)
ANT 2063	Language, Thought, and Culture (This course may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture.)
ANT 3513	The Human Skeleton
ANT 3523	Medical Anthropology
ANT 3883	Death and Dying
BIO 1033	Drugs and Society
BIO 3613	The Biology of Aging
GRG 3443	Medical Geography
HTH 2413	Introduction to Community and Public Health (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)
HTH 2513	Personal Health (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)
PSY 3023	Social Psychology of Small Groups
PSY 3113	Motivation and Emotion
PSY 3513	Developmental Psychopathology
PSY 3523	Psychology of Adulthood and Aging
PSY 3543	Introduction to Clinical Psychology
PSY 4253	Psychology of Health
SOC 1043	Introduction to Public Health
SOC 2023	Social Context of Drug Use (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)
SOC 3203	Gerontology
SOC 3213	Medical Sociology
SOC 4043	Global Health
SOC 4053	Health Care System
SOC 4073	Social and Behavioral Theories in Public Health
SOC 4683	Health Disparities

4. 21 additional semester credit hours in arts and humanities, 12 of which must be upper-division and 3 from the core curriculum (selected from a different component area than above), chosen from the following:

AHC 4333	Topics in Art History and Criticism	
ART 1103	Introduction to Visual Arts (This course may be used to satisfy the Core Curriculum requirement in Creative Arts.)	
BBL 3043	Social Psychological Considerations in Mexican American Communities	
CSH 3823	Advanced Topics in World Cultures	
DAN 1113	Introduction to Modern Dance	
ENG 2413	Technical Writing	
ENG 3383	Writing in Public, Professional, and Workplace Contexts	
ENG 4433	Advanced Professional Writing	
HIS 3453	History of Medicine in America	
HUM 2023	Introduction to the Humanities I (This course may be used to satisfy the Core Curriculum requirement in Creative Arts.)	
HUM 2033	Introduction to the Humanities II (This course may be used to satisfy the Core Curriculum requirement in Creative Arts.)	
HUM 2093	World Religions	
HUM 3013	History of Ideas	
PHI 2043	Introductory Logic (This course may be used to satisfy the Core Curriculum requirement in the Component Area Option.)	
PHI 2123	Contemporary Moral Issues (This course may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture.)	
PHI 3213	Ethics	
PHI 3223	Approaches to Knowledge and Reality	
PHI 3033	Philosophy of Science	
POL 3303	Race, Ethnicity and Public Policy	
SOC 3043	Race and Ethnic Relations	
B. 6 semester credit hours in a single language other than English		6
C. 12 semester credit hours of upper-division free electives		12
Total Credit Hours		91

Note: Any Core Curriculum course may be used to satisfy the Component Area Option requirement.

Course Sequence Guide for B.A. Degree in Medical Humanities

This course sequence guide is designed to assist students in completing their UTSA undergraduate Medical Humanities degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Medical Humanities with a Pre-Medicine Concentration – Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
POL 1013	Introduction to American Politics (core)	3
MAT 1073	Algebra for Scientists and Engineers (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Free elective (CHE 1073 if needed)		3
Spring		
BIO 1404	Biosciences I (core and major)	4
CHE 1103 & CHE 1121	General Chemistry I	4
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Creative Arts core (Arts & Humanities elective)		3

Second Year

Fall		
BIO 1414	Biosciences II (core and major)	4
CHE 1113 & CHE 1131	General Chemistry II	4
MHU 2013	Introduction to Medical Humanities	3
STA 1053	Basic Statistics (core and major)	3
Social and Behavioral Sciences core (Social & Behavioral Sciences elective)		3
Spring		
BIO 2313	Genetics	3
CHE 2603 & CHE 2612	Organic Chemistry I	5
American History core		3
Social & Behavioral Sciences elective		3

Third Year

Fall		
BIO 3813	Cell Biology	3
CHE 3643	Organic Chemistry II	3
PHY 1603 & PHY 1611	Algebra-based Physics I	4
POL 1133 or 1213	Texas Politics and Society (core)	3
Spring		
BIO 3513	Biochemistry	3
PHY 1623 & PHY 1631	Algebra-based Physics II	4
Arts & Humanities elective		3
Language, Philosophy and Culture core		3
Upper-division free elective		3

Fourth Year

Fall		
Upper-division Arts & Humanities elective		3
Upper-division Arts & Humanities elective		3
Upper-division Social & Behavioral Sciences elective		3

Upper-division Social & Behavioral Sciences elective	3
Upper-division free elective	3
Spring	
MHU 4813 Seminar in Medical Humanities	3
Upper-division Arts & Humanities elective	3
Upper-division Social & Behavioral Sciences elective	3
Upper-division free elective	3
Free elective (to meet 120 hour minimum)	1
Total Credit Hours:	120.0

B.A. in Medical Humanities with a Health Careers Concentration – Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
POL 1013	Introduction to American Politics (core)	3
MAT 1073	Algebra for Scientists and Engineers (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Free elective (CHE 1073 if needed)		3

Spring

CHE 1103 & CHE 1121	General Chemistry I	4
STA 1053	Basic Statistics (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Creative Arts core (Arts & Humanities elective)		3

Second Year

Fall		
BIO 1404	Biosciences I (core and major)	4
MHU 2013	Introduction to Medical Humanities	3
Foreign language (semester I)		3-4
Social and Behavioral Sciences core (Social & Behavioral Sciences elective)		3

Spring

BIO 1414	Biosciences II (core and major)	4
American History core		3
Foreign language (semester II)		3-4
Social & Behavioral Sciences elective		3
Upper-division Arts & Humanities elective		3

Third Year

Fall		
BIO 2313	Genetics	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Social & Behavioral Sciences elective		3
Upper-division Social & Behavioral Sciences elective		3
Upper-division free elective		3

Spring

PHY 1603 & PHY 1611	Algebra-based Physics I	4
Arts & Humanities elective		3

Language, Philosophy and Culture core	3
Upper-division Social & Behavioral Sciences elective	3
Upper-division free elective	3

Fourth Year

Fall

Upper-division Arts & Humanities elective	3
Upper-division Arts & Humanities elective	3
Upper-division Social & Behavioral Sciences elective	3
Upper-division Social & Behavioral Sciences elective	3
Upper-division free elective	3

Spring

MHU 4813 Seminar in Medical Humanities	3
Arts & Humanities elective	3
Upper-division Arts & Humanities elective	3
Upper-division free elective	3
Free elective (to meet 120 hour minimum)	0-2

Total Credit Hours: 120.0

Bachelor of Arts Degree in Philosophy

The minimum number of semester credit hours required for this degree is 120, including the hours of the Core Curriculum requirements. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Philosophy must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Note: If a language is used to satisfy the three-hour Language, Philosophy and Culture core requirement, students will need to take an additional three hours in the same language for the degree requirement

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Required courses

PHI 2013	Basic Philosophical Problems	3
PHI 2023	Introduction to Ancient Philosophy	3
PHI 2033	Introduction to Early Modern Philosophy	3
PHI 2043	Introductory Logic	3
PHI 3213	Ethics	3
PHI 3223	Approaches to Knowledge and Reality	3
PHI 4973	Seminar for Philosophy Majors	3
Additional upper-division philosophy electives		12

B. Single language other than English

Select 6 semester credit hours in a single language other than English	6
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C. Approved support work

39 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of Philosophy. Recommended disciplines include: Mathematics and Natural Sciences; Social and Behavioral Sciences; Language, Literature, and Humanities; History and Theory of Art and Music.

Total Credit Hours **78**

Course Sequence Guide for B.A. Degree in Philosophy

This course sequence guide is designed to assist students in completing their UTSA undergraduate Philosophy degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Philosophy – Four-Year Academic Plan

First Year

Fall	Credit Hours
WRC 1013 Freshman Composition I (Q) (core)	3
HIS 1043, 1053, or 2053 United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
Foreign language (semester I)	3-4
Mathematics core	3
Life & Physical Sciences core	3
Spring	
AIS 1203 Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053 United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1023 Freshman Composition II (Q) (core)	3
Foreign language (semester II)	3-4
Life & Physical Sciences core	3

Second Year

Fall	Credit Hours
PHI 2013 Basic Philosophical Problems	3
PHI 2023 Introduction to Ancient Philosophy	3
POL 1013 Introduction to American Politics (core)	3
Language, Philosophy & Culture core	3
Support work	3
Spring	
PHI 2033 Introduction to Early Modern Philosophy	3
PHI 2043 Introductory Logic	3
POL 1133 or 1213 Texas Politics and Society (core)	3

Support work	3
Creative Arts core	3

Third Year

Fall

ECO 2023, 2013, or 2023	Introductory Microeconomics, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
PHI 3213	Ethics	3
Upper-division PHI elective		3
Upper-division support work		3
Component Area Option core		3

Spring

PHI 3223	Approaches to Knowledge and Reality	3
Free elective		3
Upper-division free elective		3
Upper-division PHI elective		3
Upper-division support work		3

Fourth Year

Fall

PHI 4000-level elective		3
Free elective		3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3

Spring

PHI 4973	Seminar for Philosophy Majors	3
PHI 4000-level elective		3
Free elective		3
Free elective (to meet 120 hour minimum)		1-3
Upper-division free elective		3

Total Credit Hours: 120.0

- Minor in Classical Studies (p. 181)
- Minor in Humanities (p. 182)
- Minor in Philosophy (p. 182)
- Minor in Religious Studies (p. 182)

Minor in Classical Studies

All students pursuing the minor in Classical Studies must complete 21 semester credit hours.

A. Minor requirements

LAT 2113	Intermediate Latin I (or equivalent)	3
or GRK 2113	Intermediate Classical Greek I	

B. Required courses

CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
CLA 2033	Introduction to Classical Literature	3

C. Three additional courses in Classics, Greek, or Latin

Select 9 additional semester credit hours of coursework in Classics, Greek, or Latin (including Latin study in FL 3043), 6 hours of which must be at the upper-division level. 3 hours may be from a 2000-level Greek or 2000-level Latin (including Latin study in FL 2043)

Total Credit Hours 21

Minor in Humanities

All students pursuing the Minor in Humanities must complete 21 semester credit hours.

A. Minor requirements

HUM 3013 History of Ideas 3

B. Three background courses

Select one course from each of the following groups 9

1. Group 1

AHC 1113 Survey of Art and Architecture from Prehistoric Times to 1350

AHC 1123 Survey of Art and Architecture in Europe and the New World from 1350 to 1750

AHC 1133 Survey of Modern Art

2. Group 2

CLA 2013 Introduction to Ancient Greece

CLA 2023 Introduction to Ancient Rome

CLA 2033 Introduction to Classical Literature

3. Group 3

PHI 2013 Basic Philosophical Problems

PHI 2023 Introduction to Ancient Philosophy

PHI 2033 Introduction to Early Modern Philosophy

C. Additional upper-division coursework in humanities

Select 9 additional semester credit hours of upper-division coursework in Humanities 9

Total Credit Hours 21

Minor in Philosophy

All students pursuing the Minor in Philosophy must complete 21 semester credit hours.

A. Required Courses

PHI 2013 Basic Philosophical Problems 3

PHI 2023 Introduction to Ancient Philosophy 3

PHI 2033 Introduction to Early Modern Philosophy 3

PHI 2043 Introductory Logic 3

PHI 3213 Ethics 3

PHI 3223 Approaches to Knowledge and Reality 3

B. Additional upper-division courses in Philosophy

Additional coursework 3

Total Credit Hours 21

Minor in Religious Studies

All students pursuing the Minor in Religious Studies must complete 21 semester credit hours.

A. Required courses

HUM 2093 World Religions 3

PHI 3013 Philosophy of Religion 3

Select two courses from the following: 6

HIS 2543 Introduction to Islamic Civilization

HUM 3213 The Christian Classics

PHI 3073 Asian Philosophy

Select two courses from the following: 6

ANT 3133 Ritual and Symbol

HUM 3223 The Bible as Literature

SOC 3093 Religion and Society

B. Additional upper-division religious studies courses

Select one of the following: 3

CLA 3123 Cultural Issues in Classical Antiquity

HUM 4973 Senior Seminar in Humanities

PHI 4973 Seminar for Philosophy Majors

Total Credit Hours 21

Certificate in Latin

The Certificate in Latin is intended for Classics & Humanities majors who wish to acquire more rigorous and thorough training in Latin language and literature, in anticipation of entering a graduate program in Classics or a related discipline, or of obtaining certification as a teacher of Latin at the secondary level. The Certificate is granted upon graduation from the university.

Students pursuing the Certificate in Latin must complete a minimum of 15 semester credit hours from the following courses:

LAT 2113 Intermediate Latin I

LAT 2123 Intermediate Latin II

LAT 2213 Self-Paced Intermediate Latin

LAT 3113 Selected Latin Authors

LAT 3213 Latin Epic Poetry

LAT 3223 Latin Lyric Poetry

LAT 3253 Republican Prose

LAT 4013 Advanced Readings in Latin

Department of Political Science and Geography

The Department of Political Science and Geography offers Bachelor of Arts degrees in Geography, Global Affairs, and Political Science. The Department also offers Minors in Geography, Global Affairs, Latin American Studies, Legal Studies, and Political Science.

Department Honors and Signature Experience

The Honors Program of the Department of Political Science and Geography is an opportunity for advanced study for students who have demonstrated commendable academic performance. The prerequisites for a student's participation in the Honors Program are a minimum grade point average of 3.0 at UTSA, a 3.5 grade point average in the major, and recommendation by a member of the Political Science and Geography faculty. Students who are approved will enroll in the appropriate honors thesis courses during their final semester at UTSA. To earn honors, the thesis must be passed by an Honors Committee that will be formed with

the recommending faculty and two other faculty members. Students interested in the Honors Program should contact the Department for additional information.

As part of the College of Liberal and Fine Arts Signature Experience, which seeks to offer students opportunities to apply ideas and knowledge in real-world settings, the Department encourages students to enroll in mentorship courses such as an Internship, Independent Study, Advanced Research Tutorial, and Research Practicum. Majors may apply 3 or 6 semester credit hours of internship study to their baccalaureate program. Internships entail supervised workplace experience, allowing the integration of academic and practitioner learning. The internship coordinator of the Department of Political Science and Geography oversees placement. Department faculty members provide supervision and grade internship performance. Students majoring in nonsocial science disciplines are welcome to participate but should consult with their faculty advisors regarding the role of the internship within their own degree programs. Further information can be obtained from the internship coordinator.

Independent Studies are arranged with Department faculty and normally cover topics that are not presented in listed courses. The Research Practicum enables students to focus on an applied research project that makes a contribution to the discovery or resolution of community needs.

- Bachelor of Arts Degree in Geography (p. 183)
- Bachelor of Arts in Global Affairs (p. 184)
- Bachelor of Arts Degree in Political Science (p. 186)

Bachelor of Arts Degree in Geography

The minimum number of semester credit hours required for the Bachelor of Arts degree in Geography, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. At least 33 semester credit hours of Geography coursework are required to fulfill the Geography major. The 33-hour total is considered a minimum, and students are encouraged to deepen and broaden their grasp of their major through careful allocation of their elective semester credit hours.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Geography must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

GRG 2613 may be used to satisfy a core requirement in Life and Physical Sciences as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Courses in the major

1. Required courses:

GRG 2613	Physical Geography	3
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GRG 2623	Human Geography	3
GRG 3314	Introduction to Geographic Information Systems	4
GRG 3323	Spatial Analysis	3
Select two of the following:		6
GRG 3113	Geography of the United States and Canada	
GRG 3123	Geography of Latin America	
GRG 3133	Geography of Europe	
GRG 3143	Geography of Mexico	
GRG 3153	Geography of Texas	
GRG 3166	Physical and Cultural Geography of the American Southwest	
GRG 3413	Geography of the Middle East and North Africa	
GRG 3423	Geopolitics of Russia and Eurasia	
GRG 3433	The Geography and Politics of the Asian Rim	

2.15 additional semester credit hours of geography electives. 15
A maximum of 6 of these hours, as approved by the student's academic advisor, may be applied to the major from selected courses in the following areas:

urban and economic, and cultural studies
international courses including Global Analysis
earth science and resources
methods courses

B. Single language other than English

Select 6 semester credit hours of a single language other than English 6

C. Electives

Select 38 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of geography. 38

Total Credit Hours 78

Course Sequence Guide for B.A. Degree in Geography

This course sequence guide is designed to assist students in completing their UTSA undergraduate Geography degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Geography – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
Life & Physical Sciences core		3

POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
Free elective 3		
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Life & Physical Sciences core 3		
Second Year		
Fall		
Creative Arts core 3		
ECO 2003, 2013, or 2023	Economic Principles and Issues (core)	3
GRG 2623	Human Geography	3
Free elective 3		
Free elective 3		
Spring		
GRG 2613	Physical Geography	3
Component Area Option core 3		
Language, Philosophy & Culture core 3		
Mathematics core 3		
Free elective 3		
Third Year		
Fall		
GRG 3113, 3123, 3133, 3143, 3153, 3166, 3413, 3423, or 3433	Geography of the United States and Canada (Geography of Latin America, Geography of Europe, Geography of Mexico, Geography of Texas, Physical and Cultural Geography of the American Southwest, Geography of the Middle East and North Africa, Geopolitics of Russia and Eurasia, or The Geography and Politics of the Asian Rim)	3
Foreign language (semester I) 3-4		
Free elective 3		
Upper-division free elective 3		
Upper-division GRG elective 3		
Spring		
GRG 3113, 3123, 3133, 3143, 3153, 3166, 3413, 3423, or 3433	Geography of the United States and Canada (Geography of Latin America, Geography of Europe, Geography of Mexico, Geography of Texas, Physical and Cultural Geography of the American Southwest, Geography of the Middle East and North Africa, Geopolitics of Russia and Eurasia, or The Geography and Politics of the Asian Rim)	3
Free elective 3		

Upper division GRG elective 3		
GRG 3323	Spatial Analysis	3
Foreign language (semester II) 3-4		
Fourth Year		
Fall		
GRG 3314	Introduction to Geographic Information Systems	4
Free elective 3		
Upper-division free elective 3		
Upper-division free elective 3		
Upper-division GRG elective 3		
Spring		
GRG elective 3		
Free elective (to meet 120 hour minimum) 0-2		
Upper-division free elective 3		
Upper-division free elective 3		
Upper-division GRG elective 3		
Total Credit Hours:		120.0

Bachelor of Arts Degree in Global Affairs

The minimum number of semester credit hours required for the Bachelor of Arts degree in Global Affairs, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. At least 36 semester credit hours of Global Affairs coursework are required to fulfill the Global Affairs major. The 36-hour total is considered a minimum, and students are encouraged to deepen and broaden their grasp of the major through careful allocation of elective semester credit hours.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Global Affairs must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

GLA 1013 should be used to satisfy the core requirement for Language, Philosophy and Culture. All Global Affairs majors are required to take GLA 1013 as a prerequisite for upper-division GLA courses.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Courses in the major

30 semester credit hours must be at the upper-division level.

1. Select one of the following introduction courses in global affairs:		3
GLA/POL 2603	Introduction to Global Affairs Studies	
GLA/POL 2633	Comparative Politics	
2. Select one of the following methods courses:		3

GLA 3103	Research Methods in Global Affairs	
GLA 4123/ POL 4023	Research Techniques in Global Affairs	
POL 2703	Scope and Methods in Political Science	
3. Select one of the following international/global relations theories courses:		3
GLA 3213	Theories of International Relations	
GLA 3223	Theories of Globalization	
GLA 3233	Theories of International Justice	
4. Select three of the following governance and policy in comparative/global context courses:		9
GLA/POL 3033	International Governance	
GLA/POL 3043	International Human Rights	
GLA/POL 3503	American Foreign Policy since World War II	
GLA/POL 3483	International Political Economy	
GLA 3533	The United Nations	
GLA 3543	Diplomacy	
GLA/POL 3763	Globalization	
GLA/POL 3783	Democracy and World Politics	
GLA 3793	Politics and Ethics of International Business	
GLA/POL 4003	Comparative Foreign Policy	
GLA 4133	Conflict, Law, and Security in Global Affairs	
GLA/POL 4203	Current Topics in Global Affairs	
5. Select three of the following regional studies courses:		9
GLA/POL 3383	East European Politics	
GLA/POL 3393	Latin American Politics	
GLA/POL 3403	European Governments	
GLA/POL 3433	Governments and Politics of Southeast Asia	
GLA/POL 3443	Governments and Politics of East Asia	
GLA/POL 3453	The Politics of Mexico	
GLA/POL 3493	Politics of the Middle East	
GLA/POL 4143	The European Union	
6. Select two of the following international relations courses:		6
GLA 3003	International Law	
GLA 3013/ POL 3273	Introduction to Global Analysis	
GLA/POL 3483	International Political Economy	
GLA/POL 3513	International Organizations in World Politics	

GLA/POL 3523	Force in International Politics	
GLA 3533	The United Nations	
GLA 3543	Diplomacy	
GLA/POL 3563	Current Issues in World Politics	
GLA/POL 4013	The Intelligence Community and Global Affairs	
GLA 4133	Conflict, Law, and Security in Global Affairs	
7. Senior seminar course:		3
GLA 4973	Seminar in Global Affairs	
C. A single language other than English		6
6 semester credit hours of a language		
D. Electives		36
36 semester credit hours of electives		
Total Credit Hours		78

Course Sequence Guide for B.A. Degree in Global Affairs

This course sequence guide is designed to assist students in completing their UTSA undergraduate Global Affairs degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Global Affairs – Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
Mathematics core		3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
Life & Physical Sciences core		3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Free elective		3
Second Year		
Fall		
Social & Behavioral Sciences core		3

GLA 1013	U.S. in the Global Arena (core and major)	3
Life & Physical Sciences core		3
GLA elective		3
Free elective		3
Spring		
GLA elective		3
GLA elective		3
Free elective		3
Creative Arts core		3
Component Area Option core		3
Third Year		
Fall		
Foreign language (semester I)		3-4
GLA elective		3
Free elective		3
Free elective		3
Free elective		3
Spring		
Foreign language (semester II)		3-4
Upper-division free elective		3
Upper-division GLA course		3
GLA elective		3
Free elective		3
Fourth Year		
Fall		
Upper-division free elective		3
Upper-division free elective		3
Upper-division GLA elective		3
Upper-division GLA course		3
Upper-division GLA course		3
Spring		
GLA 4973	Seminar in Global Affairs	3
Upper-division free elective		3
Upper-division free elective		3
Upper-division GLA course		3
Free elective (to meet 120 hour minimum)		1-3
Total Credit Hours:		120.0

Bachelor of Arts Degree in Political Science

The minimum number of semester credit hours required for the Bachelor of Arts degree in Political Science, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. At least 33 semester credit hours of Political Science coursework are required to fulfill the Political Science major. The 33-hour total is considered a minimum, and students are encouraged to deepen and broaden their grasp of their major through careful allocation of their elective semester credit hours. These courses, which require advance approval from the academic advisor, should serve to introduce students to other social sciences.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Political Science must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

A. Courses in the major

Courses must be selected in the following manner:

1. Select two of the following:	6
GLA 2603 Introduction to Global Affairs Studies	
or POL 2603 International Politics	
GLA/POL 2633 Comparative Politics	
POL 2503 Introduction to Political Theory	
POL 2513 Politics and the Administrative Process	
POL 2533 Introduction to Political Science	
POL 2623 Law and Society	
2. Required course	
POL 2703 Scope and Methods in Political Science	3
3. Political science electives, 18 hours of which must be at the upper-division level, with at least 3 hours in each of the following subfields (see list of courses by subfield following the description of the political science minor):	21
American Politics	
Comparative Politics	
International Politics	
Political Theory	
Politics and the Administrative Process or Public Law	
4. One senior-level seminar	3
POL 4973 Seminar in Political Science	

B. Single language other than English

Select 6 semester credit hours of a single language other than English 6

C. Electives

Select 39 semester credit hours of electives 39

Total Credit Hours 78

Course Sequence Guide for B.A. Degree in Political Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate Political Science degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations.

Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Political Science – Four-Year Academic Plan

First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053 United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
Mathematics core	3
POL 1013 Introduction to American Politics (core)	3
WRC 1013 Freshman Composition I (Q) (core)	3

Spring

WRC 1023 Freshman Composition II (Q) (core)	3
HIS 1043, 1053, or 2053 United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
POL 1133 or 1213 Texas Politics and Society (core)	3
Free elective	3
Life & Physical Sciences core	3

Second Year

Fall

ECO 2003, 2013, or 2023 Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
POL 2503, 2513, 2533, 2603, 2623, or 2633 Introduction to Political Theory (or Politics and the Administrative Process, or Introduction to Political Science, or International Politics, or Law and Society, or Comparative Politics)	3
POL 2703 Scope and Methods in Political Science	3
Life & Physical Sciences core	3
Creative Arts core	3

Spring

POL 2503, 2513, 2533, 2603, 2623, or 2633 Introduction to Political Theory (or Politics and the Administrative Process, or Introduction to Political Science, or International Politics, or Law and Society, or Comparative Politics)	3
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Free elective 3

Free elective 3

Language, Philosophy & Culture core 3

Component Area Option core 3

Third Year

Fall

Foreign language (semester I) 3-4

Upper division POL - American 3

Free elective 3

Free elective 3

Upper-division free elective 3

Spring

Foreign language (semester II) 3-4

POL elective 3

Free elective 3

Upper-division free elective 3

Upper-division POL - Comparative 3

Fourth Year

Fall

Upper-division free elective 3

Upper-division free elective 3

Upper-division POL elective 3

Upper-division POL - International 3

Upper-division POL - Political Theory 3

Spring

Free elective (to meet 120 hour minimum) 1-3

Upper-division free elective 3

Upper-division free elective 3

Upper-division POL - Public Administration/Law 3

POL 4973 Seminar in Political Science 3

Total Credit Hours: 120.0

- Minor in Geography (p. 187)
- Minor in Global Affairs (p. 188)
- Minor in Latin American Studies (p. 188)
- Minor in Legal Studies (p. 189)
- Minor in Political Science (p. 189)

Minor in Geography

All students pursuing the Minor in Geography must complete 18 semester credit hours.

A. Courses in core concepts and regions

GRG 1013 Fundamentals of Geography 3

GRG 1023 World Regional Geography 3

B. Upper-division regional geography

Select one of the following: 3

GRG 3113 Geography of the United States and Canada

GRG 3123 Geography of Latin America

GRG 3133 Geography of Europe

GRG 3143 Geography of Mexico

GRG 3153 Geography of Texas

C. Electives in geography

Select 9 semester credit hours of upper-division electives in geography 9

Total Credit Hours 18

To declare a Minor in Geography, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in Global Affairs

All students pursuing a Minor in Global Affairs must complete 21 semester credit hours, at least 12 of which must be at the upper-division level (3000- or 4000-level courses). Political Science majors must take at least 6 hours outside their major.

A. International perspectives on global analysis courses

Select one of the following: 3

GLA 2603 Introduction to Global Affairs Studies
or POL 2603 International Politics

GLA/POL 2633 Comparative Politics

GLA 3013/ POL 3273 Introduction to Global Analysis

GLA 3213 Theories of International Relations

GLA 3223 Theories of Globalization

GLA 3503 American Foreign Policy since World War II

GLA 4013 The Intelligence Community and Global Affairs

B. Research methods courses

GLA 4123 Research Techniques in Global Affairs 3

and one of the following: 3

GLA 3103 Research Methods in Global Affairs

GRG 3323 Spatial Analysis

HIS 2003 Historical Methods

POL 2703 Scope and Methods in Political Science

SOC 3393 Quantitative Research Methods

C. Additional courses

1. Select 6 hours of 3000 or 4000 level GLA courses. 3

2. Select 9 hours of the following global conditions and issues courses: 9

AMS 3243 Studies in Transnationalism

COM 3553 Intercultural Communication

COM 3563 International Communication

ECO 3193 International Economics

FIN 4613 Introduction to International Finance

GRG 3133 Geography of Europe

GRG 3633 Geography of Development

GRG 3643 Political Geography

HIS 3423 United States-Mexico Border

HIS 3843 Migration and History

POL 3393 Latin American Politics

POL 3463 Politics of the Third World

PSY 3053 Cross-Cultural Psychology

SOC 4433 Culture and Society

No more than 6 semester credit hours selected from the following courses may be substituted for organized courses under section C with approval of the student's academic advisor and Department Chair:

GLA 4913 Independent Study

GLA 4933 Internship in Global Affairs

Total Credit Hours

21

Requests for substitutions require pre-approval of the student's academic advisor, the supervising faculty member, and the Department Chair.

To declare a Minor in Global Affairs, obtain advice, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

Minor in Latin American Studies

The Minor in Latin American Studies provides an interdisciplinary approach to understanding the political, cultural, historical, economical and societal processes and systems of the region.

All students pursuing a Minor in Latin American Studies must complete 18 semester credit hours. No more than four courses from one discipline.

A. Courses in politics, geography and economics

Select two of the following: 6

ECO 4303 Economics of Developing Countries

GRG 3123 Geography of Latin America

GRG 3143 Geography of Mexico

GLA/POL 3393 Latin American Politics

GLA/POL 3453 The Politics of Mexico

B. Courses in history and culture

Select four of the following: 12

AHC 3423 Arts of Ancient America

AHC 3523 Latin American Art

AHC 4333 Topics in Art History and Criticism (when topic includes Latin American content)

ANT 3273 Civilizations of Mexico

ANT 3303 Nature and Culture in Greater Amazonia

ANT 3363 Indians of Mesoamerica

HIS 2533 Introduction to Latin American Civilization

HIS 3033 The Spanish and Mexican Borderlands

HIS 3123 Colonial Texas under Spanish and Mexican Rule to 1836

HIS 3293 Imperial Spain

HIS 3303 History of Mexico

HIS 3313 History of U.S. Relations with Latin America

HIS 3353 Latin America since Independence

HIS 3373 Revolution in Latin America

HIS 3403 Pre-Hispanic and Colonial Latin America

MUS 2693 The Music of Latin America and the Caribbean

SOC 3433 Mexican Immigration and U.S. Society

SPN 3153 Spanish for the Business/Management Fields

SPN 3463 Latin American Literature to Modernism

SPN 3473 Latin American Literature since Modernism

SPN 3623 Latin American Culture and Civilization

Total Credit Hours

18

To declare a Minor in Latin American Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in Legal Studies

All students pursuing a Minor in Legal Studies must complete 21 semester credit hours, at least 12 hours of which must be at the upper-division level.

A. Required courses

LGS 2013	Introduction to Legal Studies	3
or POL 2623	Law and Society	
ENG 2413	Technical Writing	3
or WRC 3013	Writing Strategies for the Pre-law Student	
LGS 3013	Legal Research and Writing	3

B. Any of the following LGS 4000 level courses

LGS 4013	Issues in Law and Society	3
LGS 4123	Legal and Philosophical Reasoning	
LGS 4133	Analytical Reasoning, Logic, Argumentation, and Law School Admission	
LGS 4223	Torts	
LGS 4233	The Federal Judiciary	

C. Additional courses

Select 9 semester credit hours of the following (6 of which must be at the upper-division level), in at least two disciplines other than the student's major: 9

ANT 3733	Political and Legal Anthropology	
BIO 4073	Law, Ethics, and the Life Sciences	
BLW 3013	Business Law	
BLW 3023	Business Organizations and Commercial Law	
BLW 3523	Real Estate Law	
BLW 4153	Tourism Law	
BLW 4953	Special Studies in Business Law	
COM 3113	Argumentation and Debate	
CRJ 3623	Substantive Criminal Law	
CRJ 4633	Constitutional Criminal Procedure	
CRJ 4863	Special Topics in Legal Issues and Adjudication	
ES 3203	Environmental Law	
GLA 3003	International Law	
GLA 4133	Conflict, Law, and Security in Global Affairs	
HIS 3093	United States Constitutional History	
HIS 3183	Law and American Development	
LGS 3113	Minorities and the Law	
LGS 3213	Law School Studies	
LGS 3323	Constitutional Analysis I	
LGS 3333	Constitutional Analysis II	
LGS 3413	Regulatory Law and Enterprise	
LGS 4013	Issues in Law and Society	
LGS 4123	Legal and Philosophical Reasoning	
LGS 4133	Analytical Reasoning, Logic, Argumentation, and Law School Admission	
LGS 4223	Torts	
LGS 4233	The Federal Judiciary	
LGS 4913	Independent Study	
LGS 4933	Internship in Legal Studies	
MGT 4643	Human Resources Law	
PHI 2043	Introductory Logic	

PHI 2063	Philosophy of Law	
PHI 4953	Special Studies in Philosophy	
POL 3013	The American Legal Process	
POL 3323	Constitutional Law I	
POL 3333	Constitutional Law II	
POL 3583	Jurisprudence	
POL 4123	Legal and Philosophical Reasoning	
POL 4323	Administrative Law	

Total Credit Hours 21

To declare a Minor in Legal Studies or to obtain advice, information, or approvals for course requirement substitutions, students should consult their academic advisor.

Minor in Political Science

All students pursuing the Minor in Political Science must complete 18 semester credit hours, 12 hours of which must be upper-division.

A. Lower-division courses

Select two of the following: 6

GLA 2603	Introduction to Global Affairs Studies	
or POL 2603	International Politics	
GLA/POL 2633	Comparative Politics	
POL 2503	Introduction to Political Theory	
POL 2513	Politics and the Administrative Process	
POL 2533	Introduction to Political Science	
POL 2623	Law and Society	
POL 2703	Scope and Methods in Political Science	

B. Upper-division courses

Select 12 upper-division semester credit hours. Students must take 12 at least one upper-division class in three of the six subfields (see list of courses by subfield below):

American Politics

POL 3093	Mexican American Politics	
POL 3123	Political Psychology	
POL 3183	Women in Politics	
POL 3244	Mass Media and Public Opinion	
POL 3253	Participation and American National Elections	
POL 3283	The American Presidency	
POL 3293	Political Movements	
POL 3303	Race, Ethnicity and Public Policy	
POL 3363	Political Parties and Interest Groups	
POL 3373	The Legislative Process	
POL 3413	The Politics of Urban Development	
POL 3743	Politics in Film	
POL 3753	Latino/a Politics	
POL 3773	Experiments in Democratic Renewal	
POL 3823	Politics of Congressional Elections	

Comparative Politics

GLA/POL 3393	Latin American Politics	
GLA/POL 3403	European Governments	

GLA/POL 3433	Governments and Politics of Southeast Asia
GLA/POL 3443	Governments and Politics of East Asia
GLA/POL 3453	The Politics of Mexico
GLA/POL 3493	Politics of the Middle East
GLA 3483	International Political Economy
GLA/POL 3783	Democracy and World Politics
GLA/POL 4003	Comparative Foreign Policy
GLA 4123/ POL 4023	Research Techniques in Global Affairs
GLA 4133	Conflict, Law, and Security in Global Affairs
POL 3353	Leadership and Elites
POL/GLA 3463	Politics of the Third World
POL 3553	The Welfare State in Comparative Perspective
POL 4003	Comparative Foreign Policy
International Politics	
GLA 3003	International Law
GLA 3013/ POL 3273	Introduction to Global Analysis
GLA/POL 3033	International Governance
GLA/POL 3043	International Human Rights
GLA/POL 3383	East European Politics
GLA/POL 3483	International Political Economy
GLA/POL 3503	American Foreign Policy since World War II
GLA/POL 3513	International Organizations in World Politics
GLA/POL 3523	Force in International Politics
GLA 3533	The United Nations
GLA 3543	Diplomacy
GLA/POL 3563	Current Issues in World Politics
GLA/POL 3763	Globalization
GLA 3793	Politics and Ethics of International Business
GLA/POL 4003	Comparative Foreign Policy
GLA/POL 4013	The Intelligence Community and Global Affairs
GLA 4123/ POL 4023	Research Techniques in Global Affairs
GLA 4133	Conflict, Law, and Security in Global Affairs
GLA/POL 4143	The European Union

Political Theory

POL 3103	Political Ideology
POL 3113	American Political Thought
POL 3133	Political Philosophy: Ancient and Medieval
POL 3143	Political Philosophy: Modern
POL 3153	Political Philosophy: Contemporary
POL 3173	Justice and Social Policy
POL 3203	African American Political Thought

Administrative Process

POL 3413	The Politics of Urban Development
POL 4323	Administrative Law

Public Law

POL 3013	The American Legal Process
POL 3223	Judicial Politics
POL 3323	Constitutional Law I
POL 3333	Constitutional Law II
POL 3583	Jurisprudence
POL 4123	Legal and Philosophical Reasoning
POL 4133	Politics, Law, and Literature
POL 4323	Administrative Law

Total Credit Hours**18**

Internship hours cannot count toward the minor.

To declare a Minor in Political Science, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Psychology

The Department of Psychology offers a Bachelor of Arts degree in Psychology and a Minor in Psychology. The bachelor's degree emphasizes the empirical study of human behavior and is structured around a comprehensive core curriculum that can lead to additional training in biological psychology, clinical psychology, cognitive psychology, cross-cultural psychology, developmental psychology, health psychology, industrial-organizational psychology, and social psychology.

Department of Psychology Admission Policy

The goal of the Department of Psychology is to provide its students with a program of study that has the highest possible standards. To achieve this goal, the admission policy of the Department of Psychology is designed to identify those students most likely to succeed in their undergraduate psychology education. A psychology minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in psychology.

Direct Admission Criteria

- Applicants entering UTSA from high school and transfer students who have completed fewer than 30 hours of transferable college credit will be directly admitted to the Department of Psychology if they:
 - meet all UTSA undergraduate admission requirements
 - are ranked in the top 25 percent of their high school graduation class
 - have a cumulative grade point average of 2.0 or better for all college-level courses completed.

- d. have successfully completed evaluation under the Texas Success Initiative for unencumbered registration for courses.
2. Applicants who have completed 30 or more hours of transferable college credit will be directly admitted to the Department of Psychology if they:
 - a. meet all UTSA undergraduate admission requirements
 - b. have a cumulative grade point average of 2.0 or better for all college-level courses completed
 - c. have successfully completed the following or equivalent courses with the grade of "C-" or better:
 - i. PSY 1013 Introduction to Psychology
 - ii. And one of the following Math or Statistics courses: MAT 1023, MAT 1033, MAT 1073, MAT 1093, MAT 1163, MAT 1193, MAT 1214, STA 1053, or STA 1043.

Applicants Who Do Not Meet Direct Admission Criteria

Applicants for admission to the Department of Psychology who do not meet the criteria for direct admission stated above will be admitted to the Department as prepsychology (PRP) students. Academic performance for admittance to the Department of Psychology will be evaluated after students have met all the following conditions:

1. have a grade point average of at least 2.0 for all UTSA coursework
2. have a grade point average of at least 2.0 for all UTSA Department of Psychology coursework
3. have successfully completed the following or equivalent courses with the grade of "C-" or better
 - a. PSY 1013 Introduction to Psychology
 - b. And one of the following Math or Statistics courses: MAT 1023, MAT 1033, MAT 1073, MAT 1093, MAT 1163, MAT 1193, MAT 1214, STA 1053, or STA 1043.

A student who does not meet the requirements to declare a Psychology major after completing 12 total semester credit hours of psychology coursework at UTSA will only be permitted to take additional psychology courses that are needed for a psychology minor and will no longer be considered a prepsychology student.

Department Honors

The Department of Psychology awards Honors in Psychology to certain of its outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection of students for honors designation is based on a student's academic performance and recommendation by the faculty in the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in Psychology at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the department faculty. Students applying for Honors in Psychology are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member.

Students interested in this program should contact their faculty advisors for additional information.

Bachelor of Arts Degree in Psychology

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

The Psychology Department encourages students' participation in the College of Liberal and Fine Arts Signature Experience by offering students a variety of opportunities to apply their ideas and knowledge to real-world settings. All Psychology majors enroll in Experimental Psychology and the accompanying laboratory. Experimental Psychology offers students the opportunity to learn the fundamentals of research design and use these fundamentals to design an original research project which addresses many questions of applied interest. In addition, students can enroll in internships and independent study projects as part of their program of study. Internships are arranged through the Department of Psychology Internship Coordinator and are designed to provide students with experiences at a wide variety of organizations and institutions in the San Antonio area. Independent study projects are arranged through consultation with individual members of the Psychology faculty and are designed to provide students with an opportunity to further develop their research skills. These projects are conducted under the supervision of a faculty member and usually involve work associated with the faculty member's primary line of research.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Psychology must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students will need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1023, MAT 1033, MAT 1073, or STA 1053 is recommended to satisfy the core requirement in Mathematics. PSY 1013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Arts degree in Psychology must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1023	College Algebra with Applications
PSY 1013	Introduction to Psychology

Degree Requirements

A. Psychology major courses

1. Lower-division courses
 - a. Introduction to Psychology

PSY 1013	Introduction to Psychology	3
b. Select two of the following courses:		6
PSY 2503	Developmental Psychology	
PSY 2513	Abnormal Psychology	
PSY 2523	Personality	
PSY 2533	Social Psychology	
c. Select one of the following:		3
PSY 2543	Theories of Learning	
PSY 2573	Psychology of Thought	
d. Statistics for Psychology or approved substitute		
PSY 2073	Statistics for Psychology (Prerequisites: MAT 1023, MAT 1033, MAT 1073, or STA 1053; and one psychology course. PSY 2073 must be completed with a minimum grade of "C-" before enrolling in PSY 3403 and PSY 3413, and should be completed during the freshman or sophomore year.)	3
2. Upper-Division courses		
a. Experimental Psychology		
PSY 3403	Experimental Psychology	3
PSY 3413	Experimental Psychology Laboratory	3
b. Select two of the following:		6
PSY 3103	Cognition	
PSY 3153	Sensation and Perception	
PSY 4113	Cognitive Development	
PSY 4143	Memory	
PSY 4183	Physiological Psychology	
PSY 4213	Social Cognition	
PSY 4323	Psychology of Language	
c. Select 12 semester credit hours of upper-division courses in psychology. No more than 3 hours of Independent Study, Internship in Psychology, or Honors Thesis may be counted toward this requirement.		12
B. Electives		39
Select 39 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines outside of Psychology that support the study of Psychology		
Total Credit Hours		78

Course Sequence Guide for B.A. Degree in Psychology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Psychology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Psychology – Four-Year Academic Plan

First Year

Fall	Credit Hours
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AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
MAT 1023, 1033, or 1073	College Algebra with Applications, or Algebra with Calculus for Business, or Algebra for Scientists and Engineers (core)	3
PSY 1013	Introduction to Psychology (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
PSY 2073	Statistics for Psychology	3
PSY 2503	Developmental Psychology (or Abnormal Psychology, or Personality, or Social Psychology)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		
Second Year		
Fall		
ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
POL 1013	Introduction to American Politics (core)	3
PSY 2503, 2513, 2523, or 2533	Developmental Psychology (or Abnormal Psychology, or Personality, or Social Psychology)	3
PSY 2543 or 2573	Theories of Learning (or Psychology of Thought)	3
Life & Physical Sciences core		
Spring		
POL 1133 or 1213	Texas Politics and Society (core)	3
PSY 3403	Experimental Psychology	3
PSY 3413	Experimental Psychology Laboratory	3
Free elective		
Language, Philosophy & Culture core		
Third Year		
Fall		
Free elective		
Free elective		
PSY Cognitive component		
Upper-division PSY elective		
Creative Arts core		
Spring		
Free elective		
PSY Cognitive component		
Upper division free elective		

Upper-division PSY elective	3
Upper-division free elective	3
Fourth Year	
Fall	
Free elective	3
Free elective	3
Upper-division PSY elective	3
Upper-division PSY elective	3
Upper-division free elective	3
Spring	
Free elective	3
Free elective	3
Free elective (to meet 120 hour minimum)	3
Upper-division free elective	3
Upper-division free elective	3
Total Credit Hours:	120.0

Minor in Psychology

All students pursuing a Minor in Psychology must complete 18 semester credit hours.

A. Required courses

PSY 1013	Introduction to Psychology (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences: Social and Behavioral Science.)	3
PSY 3403	Experimental Psychology (Concurrent enrollment in PSY 3413 waived; prerequisite of PSY 2073 or equivalent required.)	3

B. Select one of the following:

PSY 2503	Developmental Psychology	
PSY 2513	Abnormal Psychology	
PSY 2523	Personality	
PSY 2533	Social Psychology	

C. Select one of the following

PSY 2543	Theories of Learning	3
PSY 2573	Psychology of Thought	

D. Upper-division psychology courses

Select 6 additional upper-division credit hours of psychology courses, 6 no more than 3 hours of which may be in Independent Study or Internship

Total Credit Hours	18
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To declare a Minor in Psychology, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Sociology

The Department of Sociology offers a Bachelor of Arts degree in Sociology and a Minor in Sociology. At least 36 semester credit hours of sociology coursework are required to fulfill a Sociology major. The 36-hour total is considered a minimum, and students are encouraged to

deepen and broaden their grasp of their major through careful allocation of their elective semester credit hours.

The Sociology degree requires students to complete at least 6 semester credit hours of support work. These courses, which require advance approval from advisors, should serve to introduce students to other social sciences in addition to those entailed in the coursework within students' major discipline.

Internship in Sociology

As part of the COLFA Signature Experience, the Sociology Department encourages its students to participate in an internship. Internship entails supervised experience, usually within selected organizations in the San Antonio area. The majors are asked to find their internship placements. The internship coordinator of the Department of Sociology approves placement. Students majoring in nonsocial science disciplines are welcome to participate but should consult with their faculty advisors regarding the role of the internship within their own degree programs. Further information can be obtained from the internship coordinator.

Department Honors

The Department of Sociology, through its Department Honors program, provides the opportunity for advanced study under close faculty supervision to those students who have demonstrated outstanding scholarship.

Selection for honors designation is based on academic performance and recommendation by discipline faculty. To be eligible for the program, students must have a minimum grade point average of 3.0 overall at UTSA and a minimum grade point average of 3.5 in Sociology at UTSA. Minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the Sociology faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis course during their final two semesters. The supervising faculty sponsor and another department faculty member must approve the completed thesis. Students interested in this program should contact the department's faculty undergraduate advisor for additional information.

Bachelor of Arts Degree in Sociology

The minimum number of semester credit hours required for the Bachelor of Arts degree in Sociology, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Sociology must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both degree requirements and Core Curriculum requirements; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

SOC 1013 Introduction to Sociology should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

Gateway Course

Students pursuing the Bachelor of Arts degree in Sociology must successfully complete the following Gateway Course in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

SOC 1013 Introduction to Sociology

Degree Requirements

A. Sociology major courses

1. Required courses. It is strongly recommended that theory and research methods requirements be completed by the first semester of the junior year.

SOC 1013	Introduction to Sociology	3
SOC 3343	Classical Sociological Theory	3
or SOC 3353	Contemporary Sociological Theory	
SOC 3323	Introduction to Social Research	3
SOC 3373	Qualitative Research Methods	3
or SOC 3393	Quantitative Research Methods	

2. Select 24 additional semester credit hours of Sociology electives as approved by the student's advisor. Students are encouraged to take a broad variety of courses.

B. Single language other than English

Select 6 semester credit hours in a single language other than English 6

C. Electives

Select 36 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 6 semester credit hours of upper-division coursework in disciplines that support the study of Sociology. 36

Total Credit Hours 78

Course Sequence Guide for B.A. Degree in Sociology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Sociology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Sociology – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
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SOC 1013	Introduction to Sociology (core and major)	3
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WRC 1013	Freshman Composition I (Q) (core)	3
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Mathematics core		3
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Spring

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era, or United States History: Civil War Era to Present, or Texas History (core)	3
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WRC 1023	Freshman Composition II (Q) (core)	3
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Free elective		3
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Free elective		3
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Life & Physical Sciences core		3
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Second Year

Fall

ECO 2003, 2013, or 2023	Economic Principles and Issues, or Introductory Macroeconomics, or Introductory Microeconomics (core)	3
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SOC 3343 or 3353	Classical Sociological Theory (or Contemporary Sociological Theory)	3
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Free elective		3
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Life & Physical Sciences core		3
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Creative Arts core		3
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Spring

SOC 3323	Introduction to Social Research	3
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Free elective		3
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Free elective		3
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Language, Philosophy, & Culture core		3
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Upper-division free elective		3
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Third Year

Fall

POL 1013	Introduction to American Politics (core)	3
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SOC 3373 or 3393	Qualitative Research Methods (or Quantitative Research Methods)	3
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Foreign language (semester I)		3-4
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SOC elective		3
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Upper-division free elective		3
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Spring

POL 1133 or 1213	Texas Politics and Society (core)	3
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Foreign language (semester II)		3-4
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Upper-division free elective		3
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Upper-division free elective		3
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Upper-division SOC elective		3
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Fourth Year

Fall

Upper-division SOC elective		3
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Upper-division free elective		3
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Upper-division free elective		3
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Upper-division free elective		3
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SOC elective	3
Spring	
Free elective (to meet 120 hour minimum)	1-3
SOC elective	3
Upper-division free elective	3
Upper-division SOC elective	3
Upper-division SOC elective	3
Total Credit Hours:	120.0

Minor in Sociology

All students pursuing a Minor in Sociology must complete 21 semester credit hours, 12 of which must be at the upper-division level.

A. Required courses

SOC 1013	Introduction to Sociology	3
SOC 3343	Classical Sociological Theory	3
or SOC 3353	Contemporary Sociological Theory	
SOC 3323	Introduction to Social Research	3
B. Select 12 semester credit hours of Sociology electives		12
Total Credit Hours		21

To declare a Minor in Sociology, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

College of Public Policy

The College of Public Policy offers a Bachelor of Arts degree in Criminal Justice, minor in Criminal Justice, Bachelor of Public Administration, and minor in Nonprofit Management.

Department of Criminal Justice

The Department of Criminal Justice offers a Bachelor of Arts degree which provides the opportunity for comprehensive study of criminal justice, and a Minor in Criminal Justice. Students completing the Bachelor of Arts degree may pursue professional careers in government or the private sector as well as apply for admission to law or graduate schools.

Bachelor of Arts Degree in Criminal Justice

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. Criminal Justice majors, through consultation with faculty advisors, should choose elective courses from Core Curriculum requirements that will enhance their awareness of the complex social and cultural issues confronting contemporary American society.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Criminal Justice must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

CRJ 1113 The American Criminal Justice System may be used to satisfy the core requirement in Social and Behavioral Sciences as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Course

Students pursuing the Bachelor of Arts degree in Criminal Justice must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CRJ 1113 The American Criminal Justice System

Major Degree Requirements (78 semester credit hours)

All required and elective CRJ courses must be completed with a grade of "C-" or better to count towards a major in Criminal Justice. All Criminal

Justice majors must complete CRJ 3013 with a "C-" or better prior to enrolling in a CRJ 4000 level course.

A. Criminal Justice Core (18 semester credit hours)

1. 9 semester credit hours of required courses:

CRJ 1113	The American Criminal Justice System	3
CRJ 2153	Criminological Theory	3
CRJ 3013	Research Design and Analysis in Criminal Justice	3

2. 9 semester credit hours of CRJ upper-division electives, with at least 3 credits chosen from each of the sub-areas:

Sub-Area 1: Policing (3 semester credit hours)		
CRJ 3123	Investigations	3
CRJ 4413	Contemporary Police Practices	3
CRJ 4443	Special Topics in Policing and Crime Prevention	3
Sub-Area 2: Courts (3 semester credit hours)		
CRJ 3623	Substantive Criminal Law	3
CRJ 4633	Constitutional Criminal Procedure	3
CRJ 4863	Special Topics in Legal Issues and Adjudication	3
Sub-Area 3: Corrections (3 semester credit hours)		
CRJ 3533	Community Corrections	3
CRJ 4603	Institutional Corrections	3
CRJ 4663	Special Topics in Corrections	3

B. Non-Core Criminal Justice Coursework

18 credit hours semester credit hours of non-core criminal justice courses chosen from the following courses:

CRJ 2213	Introduction to Policing	3
CRJ 2513	Introduction to Corrections	3
CRJ 2813	Introduction to Courts and the Legal System	3
CRJ 3123	Investigations	3
CRJ 3213	Managing Criminal Justice Organizations	3
CRJ 3233	Introduction to Forensic Science	3
CRJ 3533	Community Corrections	3
CRJ 3563	Juvenile Justice	3
CRJ 3573	Restorative Justice	3
CRJ 3623	Substantive Criminal Law	3
CRJ 3713	Ethics in Criminal Justice Practice	3
CRJ 4303	Victimology	3
CRJ 4403	Race, Ethnicity, and Criminal Justice	3
CRJ 4413	Contemporary Police Practices	3
CRJ 4443	Special Topics in Policing and Crime Prevention	3
CRJ 4453	Drugs and Crime	3
CRJ 4463	Gender and Crime	3
CRJ 4603	Institutional Corrections	3
CRJ 4633	Constitutional Criminal Procedure	3
CRJ 4653	White Collar Crime	3
CRJ 4663	Special Topics in Corrections	3
CRJ 4703	Life Course Criminology	3
CRJ 4833	Violent Crime	3
CRJ 4843	Study Abroad: International Criminal Justice	3
CRJ 4863	Special Topics in Legal Issues and Adjudication	3
CRJ 4913	Independent Study	3

CRJ 4953	Special Studies in Criminal Justice	3
CRJ 4993	Honors Thesis	3

C. Criminal Justice Internship (3 semester credit hours)

3 semester credit hours of CRJ 4933 Internship in Criminal Justice taken in consultation with the Department's internship coordinator. 3 semester credit hours of appropriate upper-division coursework may be taken in lieu of the internship if a student has relevant and documented full-time employment of at least one year in duration in a justice-related agency or is unable to obtain a placement in an agency due to verifiable personal circumstances or background issues. May be repeated for an additional 3 credit hours with a different internship work site in a subsequent semester. Prerequisites to CRJ 4933 are CRJ 1113 The American Criminal Justice System, CRJ 2153 Criminological Theory, and CRJ 3013 Research Design and Analysis in Criminal Justice.

CRJ 4933	Internship in Criminal Justice	3
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D. Electives (39 semester credit hours)

39 semester credit hours of electives, of which 15 must be 3000 or 4000 level courses.

Course Sequence Guide for Bachelor of Arts Degree in Criminal Justice

This course sequence guide is designed to assist students in completing their UTSA undergraduate Criminal Justice degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Arts in Criminal Justice – Recommended Four-Year Academic Plan

First Year

	Credit Hours
Fall	
CRJ 1113 The American Criminal Justice System	3
AIS 1203 Academic Inquiry and Scholarship (core)	3
WRC 1013 Freshman Composition I (Q) (core)	3
University Core	3
University Core	3
Spring	
WRC 1023 Freshman Composition II (Q) (core)	3
University Core	3
University Core	3
Non-Core CRJ	3
Elective	3
Second Year	
Fall	
CRJ 2153 Criminological Theory	3
University Core	3
University Core	3

University Core		3
Elective		3
Spring		
CRJ 3013 Research Design and Analysis in Criminal Justice		3
University Core		3
University Core		3
Elective		3
Upper-division Elective		3
Third Year		
Fall		
University Core		3
Major Core		3
Non-Core CRJ		3
Elective		3
Upper-division Elective		3
Spring		
Major Core		3
Non-Core CRJ		3
Elective		3
Elective		3
Upper-division Elective		3
Fourth Year		
Fall		
Major Core		3
Non-Core CRJ		3
Elective		3
Elective		3
Upper-division Elective		3
Spring		
CRJ 4933 Internship in Criminal Justice		3
Non-Core CRJ		3
Non-Core CRJ		3
Elective		3
Upper-division Elective		3
Total Credit Hours:		120.0

Minor in Criminal Justice

All students pursuing a Minor in Criminal Justice must complete 21 semester credit hours (only available for non-Criminal Justice majors).

A. Required Courses (15 semester credit hours)

1. 6 semester credit hours from the following:	6
CRJ 1113 The American Criminal Justice System	
CRJ 2153 Criminological Theory	
2. 9 semester credit hours of CRJ electives, with at least 3 credits chosen from each of the sub-areas:	9
Sub-Area 1: policing (3 semester credit hours)	
CRJ 2213 Introduction to Policing	
CRJ 3123 Investigations	
CRJ 4413 Contemporary Police Practices	
CRJ 4443 Special Topics in Policing and Crime Prevention	
Sub-Area 2: Courts (3 semester credit hours)	

CRJ 2813	Introduction to Courts and the Legal System
CRJ 3623	Substantive Criminal Law
CRJ 4633	Constitutional Criminal Procedure
CRJ 4863	Special Topics in Legal Issues and Adjudication
Sub-Area 3: Corrections (3 semester credit hours)	
CRJ 2513	Introduction to Corrections
CRJ 3533	Community Corrections
CRJ 4603	Institutional Corrections
CRJ 4663	Special Topics in Corrections

B. Elective Courses (6 semester credit hours)

6 semester credit hours of non-criminal justice core electives which must be upper-division (3000 and 4000 level) Criminal Justice (CRJ) electives. These electives will be selected by the student to reflect his or her specific interests. 6

Total Credit Hours 21

To declare a Minor in Criminal Justice, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Demography

Currently, degree programs are in effect at the graduate level only.

Department of Public Administration

The Department of Public Administration offers a Bachelor of Public Administration degree which provides the opportunity for the comprehensive study of public administration, a Minor in Public Administration, and a Minor in Nonprofit Management. Students completing the Bachelor of Public Administration degree may pursue professional careers in government, the nonprofit sector, or the private sector as well as apply for admission to law or graduate schools.

The mission of the Department of Public Administration is to prepare students for careers and leadership roles in public and nonprofit organizations and to nurture their commitment to ethical public service in a diverse society.

Bachelor of Public Administration Degree

A Bachelor of Public Administration degree is designed to prepare students for employment in the public and nonprofit sector by giving them a broad background in the basics of administration, combined with a contemporary focus on urban management, the nonprofit sector, tools of analysis, and the role of ethics.

The minimum number of semester credit hours required for the degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All required and prescribed (elective) public administration courses (PAD or NPO) must be completed with a grade of "C-" or better.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Public Administration must fulfill University Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Gateway Course

Students pursuing the Bachelor of Public Administration degree must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

PAD 1113 Public Administration in American Society

Degree Requirements

A. Core Public Administration coursework

18 semester credit hours of core Public Administration coursework: 18

PAD 1113	Public Administration in American Society
PAD 2153	Analysis and Assessment for Public Administration
PAD 3013	Introduction to Public Policy
PAD 3023	Introduction to Urban Management and Policy
PAD 3033	Introduction to Nonprofit Agencies
PAD 4853	Contemporary Issues in Public Administration (Senior Seminar)

B. Prescribed courses

21 semester credit hours of prescribed courses selected from the courses listed under Section I and Section II, at least 9 of which must be Public Administration (Section I) coursework: 21

Section I:

NPO 3003	Fundraising in Nonprofit Agencies
NPO 4933	Internship in Nonprofit Management (prior approval required)
NPO 4936	Internship in Nonprofit Management (prior approval required)
PAD 3043	Public and Nonprofit Financial Management
PAD 3053	Urban Economic Development
PAD 3113	Managing Public and Nonprofit Organizations
PAD 3123	Strategic Planning in the Public and Nonprofit Sectors
PAD 3133	Politics and Policies of San Antonio and South Texas
PAD 3143	Urban and Regional Planning
PAD 3153	Legal Context of Public Policy and Administration
PAD 4843	Study Abroad: International Public Administration
PAD 4911	Independent Study (prior approval required)
PAD 4913	Independent Study (prior approval required)
PAD 4933	Internship in Public Administration (prior approval required)

PAD 4936	Internship in Public Administration (prior approval required)
PAD 4953	Special Topics in Nonprofit Organizations
PAD 4963	Special Topics in Public Administration
PAD 4993	Honors Thesis (prior approval required)
Section II:	
COM 3893	Organizational Communication
CRJ 1113	The American Criminal Justice System
CRJ 3213	Managing Criminal Justice Organizations
CRJ 3623	Substantive Criminal Law
ECO 2003	Economic Principles and Issues
ECO 3273	Introduction to Public Sector Economics
FIN 3003	Survey of Finance
GRG 3314	Introduction to Geographic Information Systems
IS 3003	Principles of Information Systems for Management
MS 4333	Project Management
SOC 1043	Introduction to Public Health
SOC 3223	Population Dynamics and Demographic Techniques
SOC 4053	Health Care System
SOC 4083	Behavioral Epidemiology
SOC 4683	Health Disparities

In addition to the above list, Section II also includes any course listed in the UTSA Minor in Business Administration, or the Minor in Political Science.

C. Upper-division support work

15 semester credit hours of upper-division support work, chosen in consultation with an academic advisor 15

D. Free electives

24 semester hours of free electives (some may need to be upper division in order to meet the 39 hour University requirement) 24

Total Credit Hours 78

Course Sequence Guide for Bachelor of Public Administration Degree

This course sequence guide is designed to assist students in completing their UTSA undergraduate Public Administration degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Public Administration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
PAD 1113	Public Administration in American Society	3

POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Mathematics core		3
Creative Arts core		3
Component Area Option core		3

Second Year

Fall

PAD 2153	Analysis and Assessment for Public Administration	3
Elective		3
Elective		3
Language, Philosophy & Culture core		3
Life & Physical Sciences core		3

Spring

PAD 3013	Introduction to Public Policy	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Life & Physical Sciences core		3
Social & Behavioral Sciences core		3
Prescribed course (see degree requirement B)		3

Third Year

Fall

PAD 3023	Introduction to Urban Management and Policy	3
Prescribed course (see degree requirement B)		3
Prescribed course (see degree requirement B)		3
Prescribed course (see degree requirement B)		3
Upper-division support work		3

Spring

PAD 3033	Introduction to Nonprofit Agencies	3
Elective		3
Elective		3
Prescribed course (see degree requirement B)		3
Upper-division support work		3

Fourth Year

Fall

Elective		3
Elective		3
Prescribed course (see degree requirement B)		3
Upper-division support work		3
Upper-division support work		3

Spring

PAD 4853	Contemporary Issues in Public Administration (Senior Seminar)	3
Elective		3
Elective		3
Prescribed course (see degree requirement B)		3

Upper-division support work 3

Total Credit Hours: 120.0

- Minor in Nonprofit Management (p. 200)
- Minor in Public Administration (p.)

Minor in Nonprofit Management

The Minor in Nonprofit Management is open to students in any discipline. The Minor in Nonprofit Management provides the opportunity for students to learn the characteristics of the nonprofit sector, the purpose of the nonprofit sector in American society, and basic management and fundraising techniques. Students will be provided the opportunity to prepare themselves for leadership positions in social service, youth, environmental, health, arts, senior and other nonprofit organizations.

All required and prescribed (elective) public administration courses (PAD or NPO) must be completed with a grade of "C-" or better.

All students seeking the Minor in Nonprofit Management must complete 18 semester credit hours.

A. All students seeking the Minor in Nonprofit Management must complete the following 12 semester credit hours: 12

NPO 3003	Fundraising in Nonprofit Agencies
NPO 3013	Introduction to Nonprofit Agencies
or PAD 3033	Introduction to Nonprofit Agencies
NPO 4933	Internship in Nonprofit Management
or NPO 4936	Internship in Nonprofit Management
PAD 3043	Public and Nonprofit Financial Management

B. Students must also take 6 semester credit hours from the following 6 list:

COM 3893	Organizational Communication
PAD 3113	Managing Public and Nonprofit Organizations
PAD 3013	Introduction to Public Policy
PAD 3023	Introduction to Urban Management and Policy
PAD 3053	Urban Economic Development
PAD 3123	Strategic Planning in the Public and Nonprofit Sectors
PAD 3133	Politics and Policies of San Antonio and South Texas
PAD 3143	Urban and Regional Planning
PAD 3153	Legal Context of Public Policy and Administration
PAD 4843	Study Abroad: International Public Administration
PAD 4953	Special Topics in Nonprofit Organizations
PAD 4963	Special Topics in Public Administration
SOC 4053	Health Care System
SOC 4083	Behavioral Epidemiology
SOC 4683	Health Disparities

Total Credit Hours 18

Students should not take NPO 4933 Internship in Nonprofit Management or NPO 4936 Internship in Nonprofit Management until they have completed 9 hours in the minor. To declare a Minor in Nonprofit Management, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

Minor in Public Administration

The Minor in Public Administration is open to students in any discipline. The minor provides undergraduate students with foundational knowledge of the public sector. This includes fundamentals of public leadership and management, the meaning of public service in a diverse society, ethical decision-making, and the practice of policy formation and implementation. All students seeking the Minor in Public Administration must complete 18 semester credit hours.

All required and prescribed (elective) public administration courses (PAD or NPO) must be completed with a grade of "C-" or better.

A. Required courses:

All students seeking the Minor in Public Administration must complete the following 9 semester credit hours: 9

PAD 1113	Public Administration in American Society
PAD 3013	Introduction to Public Policy
PAD 3023	Introduction to Urban Management and Policy

B. Students must also take 9 semester credit hours of which at least 6 credit hours must include PAD or NPO courses listed below.

Students may select at least 6 credit hours or two courses from the following list: 6

PAD 2153	Analysis and Assessment for Public Administration
PAD 3033	Introduction to Nonprofit Agencies
or NPO 3013	Introduction to Nonprofit Agencies
PAD 3043	Public and Nonprofit Financial Management
PAD 3053	Urban Economic Development
PAD 3113	Managing Public and Nonprofit Organizations
PAD 3123	Strategic Planning in the Public and Nonprofit Sectors
PAD 3133	Politics and Policies of San Antonio and South Texas
PAD 3143	Urban and Regional Planning
PAD 3153	Legal Context of Public Policy and Administration
PAD 4843	Study Abroad: International Public Administration
PAD 4911	Independent Study (prior approval required)
PAD 4913	Independent Study (prior approval required)
PAD 4933	Internship in Public Administration (prior approval required)
PAD 4936	Internship in Public Administration (prior approval required)
PAD 4953	Special Topics in Nonprofit Organizations
PAD 4963	Special Topics in Public Administration
PAD 4993	Honors Thesis (prior approval required)
NPO 3003	Fundraising in Nonprofit Agencies
NPO 4933	Internship in Nonprofit Management (prior approval required)
NPO 4936	Internship in Nonprofit Management (prior approval required)

Students may select up to 3 credits or one course from the following list: 3

COM 3893	Organizational Communication
CRJ 1113	The American Criminal Justice System
CRJ 3213	Managing Criminal Justice Organizations

CRJ 3623	Substantive Criminal Law
ECO 2003	Economic Principles and Issues
ECO 3273	Introduction to Public Sector Economics
FIN 3003	Survey of Finance
GRG 3314	Introduction to Geographic Information Systems
IS 3003	Principles of Information Systems for Management
MS 4333	Project Management
SOC 1043	Introduction to Public Health
SOC 3223	Population Dynamics and Demographic Techniques
SOC 4053	Health Care System
SOC 4083	Behavioral Epidemiology
SOC 4683	Health Disparities
<hr/>	
Total Credit Hours	18

To declare a Minor in Public Administration, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

Department of Social Work

Currently, programs are in effect at the graduate level only.

College of Sciences

Mission Statement

The College of Sciences aims to:

- Advance scientific literacy through excellence in education and community outreach.
- Conduct cutting-edge research to expand the frontiers of science and mathematics.
- Establish broad partnerships to enhance scientific competence at all levels.
- Provide leadership in the education of underrepresented and disadvantaged groups.

College Honors

The College of Sciences provides an opportunity for a select group of outstanding students to do advanced study under close faculty supervision. Students who successfully complete the requirements, graduate with College Honors.

Selection for honors designation is based on the student's academic performance and recommendation by the faculty of the student's major discipline in the College of Sciences. To be eligible for the program, students must have a minimum institutional and overall grade point average of 3.0 and a minimum grade point average of 3.0 in the degree requirements of their major in the College of Sciences at UTSA. These minimum averages must be maintained for students to receive the approval of the Dean of the College of Sciences and the discipline faculty. Students applying for College Honors are expected to enroll in the appropriate honors research course during their final two semesters. The completed research paper must be approved by the supervising faculty sponsor and another college faculty member prior to graduation. Interested students should contact their faculty advisors for additional information.

Department of Biology

The Department of Biology offers a Bachelor of Science degree in Biology, a Minor in Biology, a Bachelor of Science degree in Microbiology and Immunology, and a Bachelor of Science degree in Environmental Science. The Department also offers the Certificate in Pathogenic Outbreak Investigations in collaboration with the Department of Computer Science and the Department Information Systems and Cyber Security in the College of Business. The certificate is located in the Department Information Systems and Cyber Security (p. 47).

The Bachelor of Science degree in Biology is designed to prepare students for professional careers in the biological sciences, medical and health service fields, research, industry, and education. The program of study is structured around a comprehensive core curriculum that includes genetics, physiology, cell biology, chemistry, physics, computer science, and mathematics. At the upper-division level, students wanting to specialize can choose one of four area concentrations: Cell and Molecular Biology, Integrative Biology, Neurobiology, or Plant Biology.

The Bachelor of Science degree in Microbiology and Immunology is designed to prepare students for professional careers in the medical and health service fields, research, industry, education and as specialists in industrial quality testing and control, and as regulatory workers in

government agencies and public health laboratories. The program of study is structured around a comprehensive core curriculum that is similar to the Biology degree but upper-division level coursework is designed to achieve a deeper education in several specialized areas of microbiology.

Due to extensive curriculum overlap, students cannot receive a double major in Biology and Microbiology and Immunology. Students must choose between a B.S. in Biology or a B.S. in Microbiology and Immunology.

The UTSA Department of Biology offers two accelerated degree programs in conjunction with the University of Texas Health Science Center at San Antonio (UTHSCSA). The DEAP program allows students to earn both the Bachelor of Science (B.S.) degree in Biology from UTSA and their Doctor of Dental Surgery (D.D.S.) degree at the UTHSCSA Dental School within a seven year period. For eligibility requirements and application visit the DEAP web site (<http://utsa.edu/healthprofessions/deap.html>). The FAME program allows students to earn both the Bachelor of Science (B.S.) degree in Biology from UTSA and their Doctor of Medicine (M.D.) degree at the UTHSCSA Medical School within a seven year period. For eligibility requirements and application visit the FAME Web site (<http://utsa.edu/healthprofessions/fame.html>).

Admission Policy for the Bachelor of Science Degree in Biology and the Bachelor of Science Degree in Microbiology and Immunology

The goal of the Department of Biology is to provide undergraduate students a program of study with the highest possible standards. To achieve this goal, the admission policy of the Department of Biology is designed to identify those students most likely to succeed in their undergraduate biology education. All applicants for admission to the Department of Biology will be admitted to the Department as prebiology (PBI) students. In order to declare a major in Biology or a major in Microbiology and Immunology, a student's academic performance will be evaluated after the five courses listed below have been completed. To declare either major, a PBI student must have:

- a grade point average of at least 2.0 for all UTSA coursework
- a grade point average of at least 2.25 for all Biology coursework (UTSA and/or transfer credit). Transfer students in addition must have a grade point average of at least 2.0 for all UTSA Department of Biology coursework.
- successfully satisfied all three sections (mathematics, reading, and writing) of the Texas Success Initiative (TSI)
- successfully completed the following or equivalent courses with a grade of "C–" or better:

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
CHE 1103	General Chemistry I	3
MAT 1193	Calculus for the Biosciences	3
PHY 1943	Physics for Scientists and Engineers I	3
or PHY 1603	Algebra-based Physics I	

PBI students are restricted from registering for upper-division (3000- and 4000-level) Biology courses without the consent of an undergraduate academic advisor in Life and Health Sciences Advising. A student who does not meet all the above requirements after completing 60 hours of credit will no longer be considered a PBI student and their major will

be changed from PBI to undeclared (UND) in the University student record system. The student must choose a major other than Biology or Microbiology and Immunology. A biology minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in biology. Students can be reinstated as a Biology major or Microbiology and Immunology major, but only after successfully completing all the PBI requirements, and upon approval of the Biology Department.

Academic Standing Policy for the Bachelor of Science Degree in Biology and the Bachelor of Science Degree in Microbiology and Immunology

All B.S. Majors in Biology or Microbiology and Immunology must maintain:

- a minimum overall UTSA grade point average of 2.0.
- a minimum overall grade point average of 2.25 in all Biology courses (UTSA and transfer credit). Transfer students in addition must have a grade point average of at least 2.0 for all UTSA Department of Biology coursework.

Students who do not meet these requirements are placed on Department of Biology academic probation. Students on Department of Biology academic probation must achieve the minimum required grade point averages by the end of the next enrolled long semester at UTSA (Fall or Spring) that follows the semester in which the student falls below the required grade point averages. Students who do not meet the minimum requirements by the end of the next subsequent-enrolled long semester will be dismissed from the B.S. degree in Biology or the B.S. degree in Microbiology and Immunology and classified as undeclared (UND) in the University student record system. The student must choose a major other than Biology or Microbiology and Immunology. A biology minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in biology. Dismissed students may appeal one time for reinstatement to either B.S. degree program: such appeals will be granted only under extraordinary circumstances. The deadline for appeal is no later than four weeks into the semester immediately following dismissal. See Life and Health Sciences Advising for required forms. All Biology majors and Microbiology and Immunology majors must have the required minimum grade point averages in order to receive the Bachelor of Science degree.

- Bachelor of Science Degree in Biology (p. 203)
- Bachelor of Science Degree in Microbiology and Immunology (p. 206)
- Bachelor of Science Degree in Environmental Science (p. 208)

Bachelor of Science Degree in Biology

The minimum number of semester credit hours required for the Bachelor of Science degree in Biology, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. All major and support work courses and the required prerequisites must be completed with a grade of "C–" or better, in addition, students must meet the grade point average requirements under the Academic Standing Policy. Students seeking teacher certification should contact the Teacher Advising and Certification Center in the College of Education and Human

Development for information. Undergraduates seeking elementary teacher certification must complete the Interdisciplinary Studies degree.

For students wishing to add focus and expertise to their degree, the Department of Biology also offers the Bachelor of Science degree with a concentration in one of four areas: Cell and Molecular Biology, Integrative Biology, Neurobiology, and Plant Biology. Adding an area of concentration does not require additional coursework beyond the normal Bachelor of Science degree program. Students do, however, have to restrict their selection of biology electives to a predefined list of complementary courses and complete the coursework within the concentration with a minimum cumulative grade point average of 3.0 or better. Students are also encouraged to enroll in BIO 4923 Laboratory Research: Biology Concentrations as part of their program of study. Specific courses required for each concentration are listed following the general degree requirements.

Due to extensive curriculum overlap, students cannot receive a double major in Biology and Microbiology and Immunology. Students must choose between a B.S. in Biology or a B.S. in Microbiology and Immunology.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed on the following pages.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Biology must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1193 may be used to satisfy the core requirement in Mathematics as well as a major requirement. Two of the following courses may be used to satisfy the core requirement in Natural Sciences, as well as major requirements: BIO 1404, BIO 1414, PHY 1943 or PHY 1963. CS 1173 may be used to satisfy the core requirement in Component Area Option as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Biology must successfully complete each of the following Gateway Courses with a grade of "C–" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

BIO 1404	Biosciences I
BIO 1414	Biosciences II
BIO 2313	Genetics

Degree Requirements

A. Required courses in the major

1. Biology requirements

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313 & BIO 2322	Genetics and Genetics Laboratory	5
BIO 3413 & BIO 3422	Advanced Physiology and Advanced Physiology Laboratory	5
BIO 3513 & BIO 3522	Biochemistry and Biochemistry Laboratory	5
BIO 3813 & BIO 3822	Cell Biology and Cell Biology Laboratory	5

2. Select one of the following sequences: 5

BIO 3283 & BIO 3292	Principles of Ecology and Principles of Ecology Laboratory	
BIO 3433 & BIO 3442	Neurobiology and Neurobiology Laboratory	
BIO 3713 & BIO 3722	Microbiology and Microbiology Laboratory	

Note: A laboratory section adds a valuable dimension to the understanding of the material presented in a lecture. In general, students are encouraged to add the appropriate laboratory section to any lecture beyond the minimum 5- semester-credit-hour requirement.

3. Additional biology electives at the upper-division level
Electives 12

B. Support work

The support courses listed below are mandatory prerequisites for various biology courses starting in a student's sophomore year. Students need to complete their support work as soon as possible, in their freshman and sophomore years, to be eligible to register for upper-division biology core courses and electives. Failure to complete the support courses listed below in a timely fashion will significantly delay a student's progress toward graduation.

1. Required chemistry courses:		
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
CHE 3673 or CHE 3643	Organic Chemistry II with Biological Applications Organic Chemistry II	3

2. Required mathematics and statistics courses:		
MAT 1193	Calculus for the Biosciences	3
STA 1403	Probability and Statistics for the Biosciences	3

3. Required physics courses:
Select one of the following options: 8

Option 1:		
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
Option 2:		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	

PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
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4. Computer-based data visualization and analysis:		
CS 1173	Data Analysis and Visualization using MATLAB	3

C. Free electives
Select 9 semester credit hours of free electives, at least 4 hours of which must be at the upper-division level to reach the minimum requirement of 39 upper-division semester credit hours 9

Total Credit Hours 87

Concentrations

For students interested in research or graduate programs, the Department of Biology offers four areas of concentration. To declare a concentration or obtain advice, students should consult an undergraduate advisor in Life and Health Sciences Advising. It is highly recommended that the student complete a research project related to the specific concentration by taking BIO 4923 Laboratory Research: Biology Concentrations. If a student takes any of the courses listed below that satisfy both the Biology degree and concentration requirements, then the student may need to take additional upper-division Biology courses in order to meet the minimum number of semester credit hours required for the Biology degree. The coursework within the concentration must be completed with a minimum cumulative grade point average of 3.0 or better.

Concentration in Cell and Molecular Biology

All candidates for the Concentration in Cell and Molecular Biology must complete the following:

BIO 3913	Molecular Biology	3
Select three of the following: 9		
BIO 3933	Principles of Cancer Biology	
BIO 4143	Developmental Biology	
BIO 4453	Endocrinology	
BIO 4723	Virology	
BIO 4743	Immunology	
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in molecular biology research.)	

Total Credit Hours 12

Concentration in Integrative Biology

All candidates for the Concentration in Integrative Biology must complete the following:

BIO 3283 & BIO 3292	Principles of Ecology and Principles of Ecology Laboratory	5
Select two of the following: 6		
BIO 3003	Introduction to Marine Ecology	
BIO 3063	Invertebrate Biology	
BIO 3213	Animal Behavior	
BIO 3323	Evolution	
BIO 4033	Conservation Biology	
BIO 4053	Wildlife Biology	
BIO 4063	Ornithology	
BIO 4233	Field Biology	

BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in integrative biology research.)	
Total Credit Hours		11

Concentration in Neurobiology

All candidates for the Concentration in Neurobiology must complete the following:

BIO 3433	Neurobiology	5
& BIO 3442	and Neurobiology Laboratory	
Select two of the following:		6
BIO 3213	Animal Behavior	
BIO 3623	Neuropsychopharmacology	
BIO 4583	The Computational Brain	
BIO 4813	Brain and Behavior	
BIO 4823	Cognitive Neuroscience	
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in neurobiology research.)	
Total Credit Hours		11

Concentration in Plant Biology

All candidates for the Concentration in Plant Biology must complete the following:

BIO 3343	Plant Cell Biology	3
Select three of the following:		9
BIO 3263	The Woody Plants	
BIO 3273	Biology of Flowering Plants	
BIO 3333	Plants and Society	
BIO 4643	Medicinal Plants	
BIO 4773	Plant-Microbe Interactions	
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in plant-based research.)	
Total Credit Hours		12

Course Sequence Guide for B.S. Degree in Biology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Biology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.*

Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Biology – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3

BIO 1404	Biosciences I (core and major) ¹	4
CHE 1103	General Chemistry I ¹	3
CHE 1121	General Chemistry I Laboratory ²	1
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

BIO 1414	Biosciences II	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory ²	1
CS 1173	Data Analysis and Visualization using MATLAB (core)	3
MAT 1193	Calculus for the Biosciences (core and major) ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3

Second Year

Fall

CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ²	2
American History core		3
Select one of the following:		4

PHY 1603 & PHY 1611	Algebra-based Physics I ¹	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I	

Spring

BIO 2313	Genetics	3
BIO 2322	Genetics Laboratory	2
CHE 3673 or 3643	Organic Chemistry II with Biological Applications	3
STA 1403	Probability and Statistics for the Biosciences	3

Select one of the following: 4

PHY 1623 & PHY 1631	Algebra-based Physics II	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II	

Third Year

Fall

BIO 3413	Advanced Physiology	3
BIO 3422	Advanced Physiology Laboratory	2
BIO 3513	Biochemistry	3
BIO 3522	Biochemistry Laboratory	2
Language, Philosophy & Culture core		3
Social & Behavioral Sciences core		3

Spring

BIO 3813	Cell Biology	3
BIO 3822	Cell Biology Laboratory	2
Free elective		3
Upper-division BIO lab (BIO 3XX2)		2
Upper-division BIO lecture (BIO 3XX3)		3
Creative Arts core		3

Fourth Year

Fall

Upper-division BIO elective	3
Upper-division BIO elective	3
Upper-division BIO elective	3
American History core	3
Government-Political Science core	3
Spring	
Upper-division BIO elective	3
Upper-division free elective	3
Upper-division free elective	3
Component Area Option core	3
Government-Political Science core	3
Total Credit Hours:	120.0

- In order to declare Biology as a major, a student's academic performance will be evaluated after these five courses have been completed. Students must see their academic advisor to declare a Biology major.
- These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Biology for scheduling of courses.

Bachelor of Science Degree in Microbiology and Immunology

The minimum number of semester credit hours (SCH) required for the Bachelor of Science degree in Microbiology and Immunology, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. All major and support work courses and the required prerequisites must be completed with a grade of "C-" or better, in addition, students must meet the grade point average requirements under the Academic Standing Policy. Students seeking teacher certification should contact the Teacher Advising and Certification Center in the College of Education and Human Development for information. Undergraduates seeking elementary teacher certification must complete the Interdisciplinary Studies degree.

Due to extensive curriculum overlap, students cannot receive a double major in Biology and Microbiology and Immunology. Students must choose between a B.S. in Biology or a B.S. in Microbiology and Immunology.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are on the following pages.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Microbiology and Immunology must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1193 may be used to satisfy the core requirement in Mathematics as well as a major requirement. Two of the following courses may be used to satisfy the core requirement in Life and Physical Sciences, as well as major requirements: BIO 1404, BIO 1414, PHY 1943 or PHY 1963.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Microbiology and Immunology must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

BIO 1404	Biosciences I
BIO 1414	Biosciences II
BIO 2313	Genetics

Degree Requirements

A. Required courses in the major, 34 of which must be at the upper-division level

1. Required biology courses		
BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313 & BIO 2322	Genetics and Genetics Laboratory	5
BIO 3413	Advanced Physiology	3
BIO 3513 & BIO 3522	Biochemistry and Biochemistry Laboratory	5
BIO 3713 & BIO 3722	Microbiology and Microbiology Laboratory	5
BIO 3813 & BIO 3822	Cell Biology and Cell Biology Laboratory	5
BIO 4743 & BIO 4752	Immunology and Immunology Laboratory	5
BIO 4783	Microbial Genetics and Physiology	3
BIO 4981	Senior Seminar in Microbiology and Immunology	1
2. All candidates must complete three of the following prescribed upper-division elective courses		
BIO 3013	Introduction to Clinical Medicine and Pathology	
BIO 3743	Bacteriology	
BIO 4473	Advanced Clinical Medicine and Pathology	
BIO 4483	Medical Mycology	
BIO 4723	Virology	
BIO 4763	Parasitology	
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in microbiology or immunology research.)	
3. Two free elective courses		6

B. Support work

The support courses listed below are mandatory prerequisites for various biology courses starting in a student's sophomore year. Students need to complete their support work as soon as possible, in their freshman and sophomore years, to be eligible to register for upper-division biology core courses and electives. Failure to complete the support courses listed below in a timely fashion will significantly delay a student's progress toward graduation.

1. Required chemistry courses		18
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	
CHE 3673 & CHE 3652	Organic Chemistry II with Biological Applications and Organic Chemistry II Laboratory	
2. Required mathematics and statistics courses		6
MAT 1193	Calculus for the Biosciences	
STA 1403	Probability and Statistics for the Biosciences	
3. Required physics courses selected from one of the following options		8
Option 1		
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
Option 2		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
Total Credit Hours		87

Course Sequence Guide for B.S. Degree in Microbiology and Immunology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Microbiology and Immunology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Microbiology and Immunology – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1404	Biosciences I (core and major) ¹	4
CHE 1103	General Chemistry I ¹	3
CHE 1121	General Chemistry I Laboratory ²	1

WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
BIO 1414	Biosciences II ¹	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory ²	1
MAT 1193	Calculus for the Biosciences (core and major) ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Second Year		
Fall		
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ²	2
STA 1403	Probability and Statistics for the Biosciences	3
Select one of the following:		4
PHY 1603 & PHY 1611	Algebra-based Physics I ¹	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I ¹	
Spring		
BIO 2313	Genetics	3
BIO 2322	Genetics Laboratory	2
CHE 3673 or 3643	Organic Chemistry II with Biological Applications	3
CHE 3652	Organic Chemistry II Laboratory ²	2
Select one of the following:		4
PHY 1623 & PHY 1631	Algebra-based Physics II	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II	
Third Year		
Fall		
BIO 3513	Biochemistry	3
BIO 3522	Biochemistry Laboratory	2
BIO 3713	Microbiology	3
BIO 3722	Microbiology Laboratory	2
Language, Philosophy & Culture core		3
Social & Behavioral Sciences core		3
Spring		
BIO 3813	Cell Biology	3
BIO 3822	Cell Biology Laboratory	2
BIO 4743	Immunology	3
BIO 4752	Immunology Laboratory	2
Upper-division BIO elective		3
Creative Arts core		3
Fourth Year		
Fall		
BIO 3413	Advanced Physiology	3
BIO 4783	Microbial Genetics and Physiology	3
Upper-division BIO elective		3
American History core		3

Government-Political Science core	3
Spring	
BIO 4981 Senior Seminar in Microbiology and Immunology	1
Free elective	3
Upper-division BIO elective	3
American History core	3
Government-Political Science core	3
Component Area Option core	3
Total Credit Hours:	120.0

1 In order to declare Microbiology and Immunology as a major, a student's academic performance will be evaluated after these five courses have been completed. Students must see their academic advisor to declare a Microbiology and Immunology major.

2 These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Biology for scheduling of courses.

Minor in Biology

The Minor in Biology is open to all majors in the University. To declare a Minor in Biology or obtain advice, students should consult with their academic advisor. All students pursuing the minor must complete a minimum of 20 semester credit hours of Biology courses. It should be noted that students seeking a minor must also complete applicable support coursework in chemistry, computer science, physics, mathematics and statistics as needed to fulfill the normal prerequisites for any course listed below. All Biology courses and their prerequisites must be completed with a grade of "C-" or better, and students must achieve a grade point average of at least 2.0 on all work used to satisfy the requirements of the minor.

A. Required courses

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313	Genetics	3

B. 3000- or 4000-level organized biology courses.

Excludes laboratory, independent study, research and seminar courses. Substitutions are not allowed without approval of the Biology department.

Total Credit Hours **20**

Environmental Science

The Environmental Science Academic Programs offer a Bachelor of Science degree in Environmental Science. This degree aims to provide students with both basic and advanced training in the field of Environmental Science.

Bachelor of Science Degree in Environmental Science

The Bachelor of Science (B.S.) degree in Environmental Science aims to provide students in the program with both basic and advanced training in the field of Environmental Science. Students will develop skills in how

to monitor environmental conditions as well as analyze environmental problems. The main areas of study will include conservation and restoration ecology, environmental management, or natural resources and wildlife management. Today's environmental problems call for scientists who are educated in more than one discipline, highly trained in technical skills, and aware of the political and social dimensions of environmental problems and how to make decisions with regard to these situations. Coursework includes a variety of interdisciplinary topics ranging from fundamentals of Geographic Information Systems, environmental systems, soil, water, global change, environmental law, and environmental assessment. Students will gain hands-on experience with many of the instrumental techniques used in environmental analysis and have the opportunity to engage in teamwork for field studies, excursions and laboratory studies. There is a strong emphasis on producing graduates with well-developed oral and written communication skills who are capable of complex problem solving.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level.

All major and support work courses must be completed with a grade of "C-" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Environmental Science must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Environmental Science must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1103	General Chemistry I
CHE 1113	General Chemistry II
CHE 2603	Organic Chemistry I
MAT 1214	Calculus I

Degree Requirements

A. Required environmental science courses must be completed with a grade of "C-" or better

ES 1113	Environmental Botany	4
& ES 1111	and Environmental Botany Laboratory	
ES 1123	Environmental Zoology	4
& ES 1121	and Environmental Zoology Laboratory	

ES 1213 & ES 1211	Environmental Geology and Environmental Geology Laboratory	4
ES 1314	Environmental Statistics	4
ES 2013 & ES 2021	Introduction to Environmental Systems I and Introduction to Environmental Systems I Laboratory	4
ES 2023 & ES 2031	Introduction to Environmental Systems II and Introduction to Environmental Systems II Laboratory	4
ES 3033 & ES 3042	Environmental Ecology and Environmental Ecology Laboratory	5
ES 3123 & ES 3121	Introduction to Soils and Introduction to Soils Laboratory	4
ES 3143 & ES 3141	Watershed Processes and Watershed Processes Laboratory	4
ES 3203	Environmental Law	3
ES 4103	Global Change	3
ES 4203	Environmental Assessment	3
ES 4211	Senior Seminar	1
ES 4253	Sources, Fate, and Transport of Chemicals in the Environment	3

B. Required support science courses must be completed with a grade of "C–" or better:

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
CS 1173	Data Analysis and Visualization using MATLAB	3
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
MAT 1193	Calculus for the Biosciences	3

C. Area of Study courses. Upper-division environmental science courses completed with a grade of "C–" or better:

15 semester credit hours of additional upper-division level environmental science courses are required. While the degree is a general degree in environmental science, three areas of study have been identified within the B.S. degree program for students interested in conservation and restoration ecology, environmental management, or natural resources and wildlife management. Depending on their area of interest, students must select courses from the following areas of study.

Conservation and Restoration Ecology

Required courses:

ES 4213	Conservation Biology
ES 4233	Restoration Ecology

Select three courses from the following:

ES 3053	Environmental Remediation
ES 3103	Environmental Microbiology
ES 3153	Environmental Chemistry
ES 3163	Ornithology
ES 3173	Mammalogy
ES 3183	Entomology
ES 3193	Herpetology
ES 3213	Biology of Flowering Plants

ES 3223	Woody Plants
ES 4113	Field Biology
ES 4123	Desert Biology
ES 4133	Natural Resource Policy and Administration
ES 4143	Environmental Geomorphology
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy
ES 4183	Environmental Toxicology
ES 4243	Wildlife Management
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science

Environmental Management

Required courses:

ES 3053	Environmental Remediation
ES 3103	Environmental Microbiology
ES 4183	Environmental Toxicology

Select two courses from the following:

ES 3153	Environmental Chemistry
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy
ES 4173	Waste Water Treatment
ES 4243	Wildlife Management
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science

Natural Resources and Wildlife Management

Required courses:

ES 4133	Natural Resource Policy and Administration
ES 4243	Wildlife Management

Select three courses from the following:

ES 3053	Environmental Remediation
ES 3103	Environmental Microbiology
ES 3153	Environmental Chemistry
ES 3163	Ornithology
ES 3173	Mammalogy
ES 3183	Entomology
ES 3193	Herpetology
ES 3213	Biology of Flowering Plants
ES 3223	Woody Plants
ES 4113	Field Biology
ES 4123	Desert Biology
ES 4143	Environmental Geomorphology
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy
ES 4173	Waste Water Treatment
ES 4183	Environmental Toxicology
ES 4213	Conservation Biology
ES 4233	Restoration Ecology
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science

Total Credit Hours

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Course Sequence Guide for B.S. Degree in Environmental Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate Environmental Science degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Environmental Science – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
ES 1113	Environmental Botany (major)	3
ES 1111	Environmental Botany Laboratory (major)	1
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
MAT 1193	Calculus for the Biosciences (major)	3
Creative Arts core		3
Spring		
ES 1123	Environmental Zoology (major)	3
ES 1121	Environmental Zoology Laboratory (major)	1
CHE 1103	General Chemistry I (support work)	3
CHE 1121	General Chemistry I Laboratory (support work)	1
WRC 1023	Freshman Composition II (Q) (core)	3
POL 1013	Introduction to American Politics (core)	3

Second Year

Fall		Credit Hours
ES 2013	Introduction to Environmental Systems I (major)	3
ES 2021	Introduction to Environmental Systems I Laboratory (major)	1
ES 1314	Environmental Statistics (major)	4
CHE 1113	General Chemistry II (support work) ¹	3
CHE 1131	General Chemistry II Laboratory (support work)	1
American History core		3
Spring		
ES 2023	Introduction to Environmental Systems II (major)	3
ES 2031	Introduction to Environmental Systems II Laboratory (major)	1
ES 1213	Environmental Geology (major)	3
ES 1211	Environmental Geology Laboratory (major)	1

CHE 2603	Organic Chemistry I (support work) ¹	3
CHE 2612	Organic Chemistry I Laboratory (support work)	2
Third Year		
Fall		
ES 3123	Introduction to Soils (major)	3
ES 3121	Introduction to Soils Laboratory (major)	1
ES 3033	Environmental Ecology (major)	3
ES 3042	Environmental Ecology Laboratory (major)	2
CS 1173	Data Analysis and Visualization using MATLAB (support work)	3
Government-Political Science core		3
Spring		
ES 3143	Watershed Processes (major)	3
ES 3141	Watershed Processes Laboratory (major)	1
ES 3203	Environmental Law (major)	3
ES 4253	Sources, Fate, and Transport of Chemicals in the Environment (major)	3
American History core		3
Social and Behavioral Sciences core		3
Fourth Year		
Fall		
ES 4103	Global Change (major)	3
ES 2113	Fundamentals of Geographic Information Systems (GIS) (major)	3
ES Area of Study Required Course (major)		3
ES Area of Study Elective (major)		3
Language, Philosophy, & Culture core		3
Spring		
ES 4203	Environmental Assessment (major)	3
ES 4211	Senior Seminar (major)	1
ES Area of Study Required Course (major)		3
ES Elective (major)		3
ES Elective (major) ²		3
Component Area Option core		3
Total Credit Hours:		120.0

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes. (Note: The prerequisite for CHE 1131 General Chemistry II Laboratory is CHE 1121 General Chemistry I Laboratory.)

² For Environmental Management, this is the third required course.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Biology for scheduling of courses.

Department of Chemistry

The Department of Chemistry offers a Bachelor of Arts degree in Chemistry, a Bachelor of Science degree in Chemistry, and a Bachelor of Science degree in Biochemistry, as well as a minor in Chemistry.

Admission Policy

The goal of the Department of Chemistry is to provide undergraduate students a program of study with the highest possible standards. The admission policy of the Department of Chemistry is designed to identify those students most likely to succeed in their undergraduate chemistry education. All applicants for admission to the Department of Chemistry will be admitted to the Department as Pre-Chemistry (PCM) or Pre-Biochemistry (PBC) students. In order to declare Chemistry or Biochemistry as a major, a student's academic performance will be evaluated after the six courses listed below have been completed. To declare a major in Chemistry/Biochemistry, a PCM/PBC student must have:

- a grade point average of at least 2.0 for all UTSA coursework
- a grade point average of at least 2.5 for the six courses listed below
- successfully satisfied all three sections (mathematics, reading, and writing) of the Texas Success Initiative (TSI)
- successfully completed the following or equivalent courses with a grade of "C-" or better:

CHE 1103	General Chemistry I	3
or CHE 1143	Principles of Chemistry I	
CHE 1113	General Chemistry II	3
or CHE 1153	Principles of Chemistry II	
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
MAT 1214	Calculus I	4
PHY 1943	Physics for Scientists and Engineers I	4
& PHY 1951	and Physics for Scientists and Engineers I Laboratory	

Applicants who have completed all the above courses as equivalent transferable college credit with a grade of "C-" or better and have no UTSA coursework can declare a Chemistry or Biochemistry major if they:

- meet all UTSA undergraduate admission requirements
- have a cumulative grade point average of 2.5 or better for transfer courses equivalent to the six course listed above
- have successfully satisfied all three sections (mathematics, reading, and writing) of the Texas Success Initiative (TSI).

PCM/PBC students are restricted from registering for upper-division (3000- and 4000-level) Chemistry courses without the consent of an undergraduate academic advisor. A student who does not meet all the above requirements after completing the above 16 credit hours will no longer be considered a PCM or PBC student and their major will be changed from PCM or PBC to undeclared (UND) in the University student record system. The student must choose a major other than chemistry. A chemistry minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in chemistry. Students can be reinstated as a Chemistry/

Biochemistry major, but only after successfully completing all the PCM/PBC requirements, and upon approval of the Chemistry Department.

- Bachelor of Science Degree in Chemistry (p. 211)
- Bachelor of Science Degree in Biochemistry (p. 213)
- Bachelor of Arts Degree in Chemistry (p. 214)

Bachelor of Science Degree in Chemistry

The Bachelor of Science degree in Chemistry provides opportunities for preparation for careers in industry, governmental agencies, environmental studies, preprofessional programs, and medical technology, and for graduate study in chemistry or other related fields. The degree plan, as described below for the Bachelor of Science degree in Chemistry, meets the minimum requirements for professional chemists as defined by the American Chemical Society, and recipients receive a certificate from the American Chemical Society.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. All major and support work courses must be completed with a grade of "C-" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Chemistry must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. The following two courses may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements: PHY 1943 and PHY 1963.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Chemistry must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1103	General Chemistry I
or CHE 1143	Principles of Chemistry I
MAT 1214	Calculus I
MAT 1224	Calculus II

Degree Requirements

A. Required courses in chemistry

CHE 1103	General Chemistry I	3
or CHE 1143	Principles of Chemistry I	

CHE 1113	General Chemistry II	3
or CHE 1153	Principles of Chemistry II	
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 2803	Quantitative Topics for Chemists	3
CHE 3214	Analytical Chemistry	4
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3804	Physical Chemistry I and Laboratory	4
CHE 3824	Physical Chemistry II and Laboratory	4
CHE 4213	Instrumental Analysis	3
CHE 4303	Biochemistry	3
CHE 4463	Inorganic Chemistry	3
CHE 4913	Independent Study	3
or CHE 4923	Special Project in Chemistry	
CHE 4971	Proseminar	1

B. Approved upper-division chemistry electives

Select 9 additional semester credit hours of approved upper-division chemistry electives, 6 hours of which must be organized courses in chemistry, at the 4000 level or above; no more than 3 semester credit hours may be from CHE 4913 Independent Study, CHE 4923 Special Project in Chemistry or CHE 4993 Honors Research.

C. Support work in science, mathematics, and statistics

1. Required courses:

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
STA 1053	Basic Statistics	3

2. Elective work from the College of Science approved by the advisor 3

D. Electives

Select 6 semester credit hours of electives 6

Total Credit Hours 87

Course Sequence Guide for B.S. Degree in Chemistry

This course sequence guide is designed to assist students in completing their UTSA undergraduate Chemistry degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Chemistry – Recommended Four-Year Academic Plan**First Year**

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 or 1143	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory ¹	1
MAT 1214	Calculus I	4
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

CHE 1113 or 1153	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory ¹	1
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (Q) (core)	3
STA 1053	Basic Statistics (core and major)	3

Second Year**Fall**

CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ¹	2
CHE 3214	Analytical Chemistry	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I (core and major)	4

Spring

CHE 2803	Quantitative Topics for Chemists	3
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory ¹	2
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II (core and major)	4
American History core		3

Summer

Government-Political Science core		3
College of Sciences elective		3

Third Year**Fall**

CHE 3804	Physical Chemistry I and Laboratory	4
CHE 4303	Biochemistry	3
Free elective		3
Government-Political Science core		3
Language, Philosophy & Culture core		3

Spring

CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3824	Physical Chemistry II and Laboratory	4
American History core		3
Social & Behavioral Sciences core		3

Fourth Year**Fall**

CHE 4463	Inorganic Chemistry	3
CHE 4913 or 4923	Independent Study	3
Upper-division CHE elective		3

Upper-division CHE elective	3
Component Area Option core	3
Spring	
CHE 4213 Instrumental Analysis	3
CHE 4971 Proseminar	1
Free elective	3
Upper-division CHE elective	3
Creative Arts core	3
Total Credit Hours:	120.0

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Chemistry for scheduling of courses.

Bachelor of Science Degree in Biochemistry

The Bachelor of Science degree in Biochemistry provides opportunities for preparation for careers in industry, governmental agencies, environmental studies, preprofessional programs, and medical technology, and for graduate study in chemistry or other related fields. The degree plan, as described below for the Bachelor of Science degree in Biochemistry, meets the minimum requirements for professional chemists as defined by the American Chemical Society, and recipients receive a certificate from the American Chemical Society. It utilizes courses from the Chemistry, Biology and Physics Departments to structure education in all the major aspects of Biochemistry.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. All major and support work courses must be completed with a grade of "C-" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Biochemistry must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. The following two courses may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements: PHY 1943 and PHY 1963. BIO 1404 may be used to satisfy the Component Area Option core requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Biochemistry must successfully complete each of the following Gateway Courses with a

grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1103	General Chemistry I
or CHE 1143	Principles of Chemistry I
MAT 1214	Calculus I
MAT 1224	Calculus II

Degree Requirements

A. Required chemistry courses

CHE 1103	General Chemistry I	3
CHE 1113	General Chemistry II	3
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 3214	Analytical Chemistry	4
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3854	Basic Biophysical Chemistry	4
CHE 4213	Instrumental Analysis	3
CHE 4303	Biochemistry	3
or BIO 3513	Biochemistry	
CHE 4913	Independent Study	3
CHE 4971	Proseminar	1

B. Required biology and physics courses

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313	Genetics	3
BIO 3522	Biochemistry Laboratory	2
BIO 3813	Cell Biology	3
BIO 3822	Cell Biology Laboratory	2
BIO 3913	Molecular Biology	3
PHY 4833	Molecular Biophysics	3

C. Upper-division biology and chemistry electives

6 additional semester credit hours of approved upper-division electives which must be organized courses in chemistry or biology at the 4000 level or above; no more than 3 semester credit hours may be from CHE 4913 Independent Study, or BIO 4923 Laboratory Research, or CHE 4993 Honors Research, or BIO 4991 Honors Research.

D. Support work in science and mathematics

1. Required courses

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

2. Electives 8

8 additional semester credit hours of elective work from the College of Sciences, as approved by the advisor.

Total Credit Hours **90**

Course Sequence Guide for B.S. Degree in Biochemistry

This course sequence guide is designed to assist students in completing their UTSA undergraduate Biochemistry degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. When available, students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Biochemistry – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship	3
BIO 1404	Biosciences I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
CHE 1103 or 1143	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory ¹	1
MAT 1214	Calculus I (core and major)	4

Spring

CHE 1113 or 1153	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
MAT 1224	Calculus II	4
BIO 1414	Biosciences II	4

Second Year

Fall		
BIO 2313	Genetics	3
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ¹	2
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I (core and major)	4

Spring

CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory ¹	2
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II (core and major)	4
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3

Third Year

Fall		
BIO 3522	Biochemistry Laboratory	2
CHE 3214	Analytical Chemistry	4
CHE 4303 or BIO 3513	Biochemistry	3
Government-Political Science core		3
Social & Behavioral Sciences core		3

Spring

BIO 3913	Molecular Biology	3
CHE 4971	Proseminar	1
CHE 3854	Basic Biophysical Chemistry	4
Language, Philosophy, & Culture core		3
Upper-division COS elective		3

Summer

BIO 3813	Cell Biology	3
BIO 3822	Cell Biology Laboratory	2

Fourth Year

Fall

CHE 4913 or BIO 4923	Independent Study	3
American History core		3
Creative Arts core		3
Upper-division CHE or BIO elective		3
Upper-division COS elective		3

Spring

CHE 4213	Instrumental Analysis	3
PHY 4833	Molecular Biophysics	3
COS elective		2
Government-Political Science core		3
Upper-division CHE or BIO elective		3

Total Credit Hours: 120.0

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Departments of Chemistry and Biology for scheduling of courses.

Bachelor of Arts Degree in Chemistry

The Bachelor of Arts degree in Chemistry is a less comprehensive degree than the Bachelor of Science degree in Chemistry. It provides opportunities for preparation for careers in industry, governmental agencies, environmental studies, and preprofessional programs. It is not recommended for students planning to pursue graduate studies in chemistry or related fields. It does not meet the criteria for an American Chemical Society approved degree in chemistry.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. All major and support work courses must be completed with a grade of "C-" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Chemistry must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours

required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. The following two courses may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements: PHY 1943 and PHY 1963.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Arts degree in Chemistry must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1103	General Chemistry I
or CHE 1143	Principles of Chemistry I
MAT 1214	Calculus I
MAT 1224	Calculus II

Degree Requirements

A. Required courses in chemistry

CHE 1103	General Chemistry I	3
or CHE 1143	Principles of Chemistry I	
CHE 1113	General Chemistry II	3
or CHE 1153	Principles of Chemistry II	
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 3214	Analytical Chemistry	4
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3643	Organic Chemistry II	3
or CHE 3673	Organic Chemistry II with Biological Applications	
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3854	Basic Biophysical Chemistry	4
CHE 4213	Instrumental Analysis	3
CHE 4971	Proseminar	1

B. Upper-division chemistry electives

Select 12 additional semester credit hours of approved upper-division chemistry electives; no more than 6 semester credit hours may be from CHE 4913 Independent Study, CHE 4923 Special Project in Chemistry or CHE 4993 Honors Research

C. Support work in science and mathematics

1. Required courses:

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

2. Select 18 additional semester credit hours of approved upper-division electives from the College of Sciences; up to 6 semester credit hours may be from the College of Engineering (9 semester credit hours from the College of Education and Human Development for students seeking teacher certification) with approval of the advisor of the degree-granting program.

D. Electives

Select 7 semester credit hours of electives	7
Total Credit Hours	87

Course Sequence Guide for B.A. Degree in Chemistry

This course sequence guide is designed to assist students in completing their UTSA undergraduate Chemistry degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Chemistry – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 or 1143	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory (core) ¹	1
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

CHE 1113 or 1153	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory ¹	1
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (Q) (core)	3
Social & Behavioral Sciences core		3

Second Year

Fall

CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ¹	2
CHE 3214	Analytical Chemistry	4
Free elective		3
American History core		3

Spring

CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory	2
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I	4
Government-Political Science core		3
Language, Philosophy and Culture core		3

Summer

PHY 1963 & PHY 1971	Physics for Scientists and Engineers II	4
Third Year		
Fall		
	Government-Political Science core	3
	Upper-division CHE elective	3
	Upper-division COS elective	3
	Upper-division COS elective	3
	Upper-division COS elective	3
Spring		
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3854	Basic Biophysical Chemistry	4
	Component Area Option core	3
	Free elective	4
Fourth Year		
Fall		
	Upper-division CHE elective	3
	Upper-division CHE elective	3
	Upper-division COS elective	3
	Upper-division COS elective	3
	American History core	3
Spring		
CHE 4213	Instrumental Analysis	3
CHE 4971	Proseminar	1
	Upper-division CHE elective	3
	Upper-division COS elective	3
	Creative Arts core	3
Total Credit Hours:		120.0

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Chemistry for scheduling of courses

Minor in Chemistry

The purpose of this program is to permit students majoring in other areas to obtain a solid, broad-based knowledge of chemistry. The program is applicable to those students in other areas of science and in preprofessional programs. All coursework for the Minor in Chemistry must be completed with a grade of "C-" or better. All students pursuing the Minor in Chemistry must complete 23 semester credit hours.

A. Required courses

CHE 1103	General Chemistry I	3
or CHE 1143	Principles of Chemistry I	
CHE 1113	General Chemistry II	3
or CHE 1153	Principles of Chemistry II	
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 3643	Organic Chemistry II	3
or CHE 3673	Organic Chemistry II with Biological Applications	

B. Select 7 additional hours of 2000-, 3000- or 4000-level chemistry courses including at least one of the following laboratory-based courses:

CHE 3214	Analytical Chemistry
CHE 3464	Descriptive Inorganic Chemistry
CHE 3854	Basic Biophysical Chemistry

Total Credit Hours **23**

To declare a Minor in Chemistry, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Computer Science

The Department of Computer Science offers a Bachelor of Science degree in Computer Science and a Minor in Computer Science. The Department also offers the Certificate in Pathogenic Outbreak Investigations in collaboration with the Department of Biology and the Department Information Systems and Cyber Security in the College of Business. The certificate is located in the Department Information Systems and Cyber Security (p. 47).

Admission Policy

The goal of the Department of Computer Science is to provide undergraduate students a program of study with the highest possible standards. To achieve this goal, the admission policy of the Department of Computer Science is designed to identify those students most likely to succeed in their undergraduate computer science education. All applicants for admission to the Department of Computer Science will be admitted to the Department as pre-computer science (PCS) students. In order to declare Computer Science as a major, a PCS student must satisfy the following criteria.

- Completion with a grade of "C-" or better of MAT 1214 Calculus I
- Completion with a grade of "C-" or better of CS 1713 Introduction to Computer Programming II and CS 1711 Introduction to Computer Programming II Recitation

A PCS student who fails to complete the criteria to change the major to CS within two years from the date of admission to the Department of Computer Science will be changed from PCS to undeclared (UND) in the University student record system. The student must choose a major other than computer science. A computer science minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in computer science.

Bachelor of Science Degree in Computer Science

The Bachelor of Science degree in Computer Science is designed to prepare students with a strong technical emphasis on modern computing and systems. The degree program offers students the opportunity to prepare for advanced graduate study and for careers in high-technology companies, business, government, and teaching. The department offers concentrations in Computer and Information Security and Software Engineering.

The Bachelor of Science degree in Computer Science requires a minimum of 120 semester credit hours, including the Core Curriculum

requirements. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All majors in computer science are required to complete all required and elective computer science courses with a grade of "C–" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Computer Science must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both degree requirements and Core Curriculum requirements; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Computer Science must successfully complete each of the following Gateway Courses with a grade of "C–" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CS 1713	Introduction to Computer Programming II
CS 1711	Introduction to Computer Programming II Recitation
CS 2123	Data Structures
CS 2121	Data Structures Recitation

Degree Requirements

A. Required courses (this also satisfies the 3 hours of Core Curriculum requirements for Mathematics):

CS 1063	Introduction to Computer Programming I	3
CS 1713 & CS 1711	Introduction to Computer Programming II and Introduction to Computer Programming II Recitation	4
CS 2123 & CS 2121	Data Structures and Data Structures Recitation	4
CS 2233	Discrete Mathematical Structures	3
CS 3333	Mathematical Foundations of Computer Science	3
CS 3343 & CS 3341	Analysis of Algorithms and Analysis of Algorithms Recitation	4
CS 3423 & CS 3421	Systems Programming and Systems Programming Recitation	4
CS 3443	Application Programming	3
CS 3723	Programming Languages	3
CS 3733 & CS 3731	Operating Systems and Operating Systems Recitation	4

CS 3843 & CS 3841	Computer Organization and Computer Organization Recitation	4
CS 3853 & CS 3851	Computer Architecture and Computer Architecture Recitation	4
MAT 1214	Calculus I (The student who is not prepared for MAT 1214 must take MAT 1093 Precalculus.)	4
MAT 1224	Calculus II	4

B. Upper-Division computer science courses

With prior written approval of the Undergraduate Advisor of Record, 24 students may take upper-division MAT or STA courses to satisfy up to 6 hours of this requirement. A student with a cumulative grade point average of 3.0 or better may enroll in graduate courses and apply the credits earned toward satisfying this requirement. Enrollment in graduate courses requires prior written approvals as described in chapter 1 (Bachelor's Degree Regulations) of this catalog.

C. Free electives

Electives	6
Total Credit Hours	81

Concentration in Computer and Information Security

All candidates for the Concentration in Computer and Information Security must fulfill the Core Curriculum requirements and the Computer Science degree requirements including, as part of the upper-division computer science electives in item B in the degree requirements, the following three courses:

CS 3433	Principles of Computer and Information Security	3
CS 4353	Unix and Network Security	3
CS 4363	Cryptography	3
Total Credit Hours		9

Concentration in Software Engineering

All candidates for the Concentration in Software Engineering must fulfill the Core Curriculum requirements and the Computer Science degree requirements including, as part of the upper-division computer science electives in item B in the degree requirements, the following course:

CS 3773	Software Engineering	3
Select two of the following:		6
CS 4393	User Interfaces	
CS 4723	Software Validation and Quality Assurance	
CS 4733	Project Management	
CS 4743	Applied Software Engineering	
CS 4773	Object-Oriented Systems	
Total Credit Hours		9

Course Sequence Guide for B.S. Degree in Computer Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate Computer Science degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time

management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Computer Science – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CS 1063	Introduction to Computer Programming I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Creative Arts core		3

Spring

CS 1713 & CS 1711	Introduction to Computer Programming II	4
MAT 1224	Calculus II	4
POL 1133 or 1213	Texas Politics and Society (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3

Second Year

Fall		
CS 2123 & CS 2121	Data Structures	4
POL 1013	Introduction to American Politics (core)	3
Free elective		3
Life & Physical Sciences core		3
Social & Behavioral Sciences core		3

Spring

CS 2233	Discrete Mathematical Structures	3
CS 3333	Mathematical Foundations of Computer Science	3
CS 3443	Application Programming	3
Life & Physical Sciences core		3
Free elective		3

Third Year

Fall		
CS 3423 & CS 3421	Systems Programming	4
CS 3723	Programming Languages	3
CS 3843 & CS 3841	Computer Organization	4
Upper-division CS elective ¹		3

Spring

CS 3343 & CS 3341	Analysis of Algorithms	4
CS 3733 & CS 3731	Operating Systems	4
CS 3853 & CS 3851	Computer Architecture	4
Upper-division CS elective		3

Fourth Year

Fall		
American History core		3
Component Area Option core		3
Upper-division CS elective		3
Upper-division CS elective		3
Upper-division CS elective		3

Spring

American History core		3
Language, Philosophy & Culture core		3
Upper-division CS elective		3
Upper-division CS elective		3
Upper-division CS elective		3

Total Credit Hours: 120.0

¹ CS 3773 must be taken for Software Engineering concentration.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Computer Science for scheduling of courses.

Minor in Computer Science

All students pursuing the Minor in Computer Science must complete 20 semester credit hours.

A. Required courses

CS 1063	Introduction to Computer Programming I	3
CS 1713 & CS 1711	Introduction to Computer Programming II and Introduction to Computer Programming II Recitation	4
CS 2123 & CS 2121	Data Structures and Data Structures Recitation	4

B. CS core courses or approved CS electives

Select 9 hours of additional CS core courses or approved CS electives, at least 6 hours of which must be at the upper-division level

Total Credit Hours 20

To declare a Minor in Computer Science, obtain advice, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

Department of Geological Sciences

The degree programs offered by the Department of Geological Sciences—a Bachelor of Science degree in Geology, a Bachelor of Arts degree in Geology, a Minor in Geology, and a Bachelor of Science degree in Multidisciplinary Science—reflect the Department’s policy of offering the opportunity for a comprehensive education of the highest quality, individualized to the needs and interests of the student. Completion of a basic science curriculum allows students to apply for entry into one of several highly specialized areas in geology. Students who have majored in one of these degree programs are eligible to apply for positions in education, industry, or government as well as for entry into professional or graduate schools.

- Bachelor of Science Degree in Geology (p. 219)
- Bachelor of Arts Degree in Geology (p. 220)

- Bachelor of Science Degree in Multidisciplinary Science (p. 222)

Bachelor of Science Degree in Geology

The Bachelor of Science degree in Geology provides opportunities to prepare for careers in the geosciences and for successful studies in graduate school. The program of study focuses on fundamentals and learning skills used by geologists in their professional careers.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. All major and support work courses must be completed with a grade of “C-” or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Geology must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Geology must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory
MAT 1224	Calculus II

Degree Requirements

A. Major courses

1. Required courses		
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	4
GEO 2003 & GEO 2011	Mineralogy and Mineralogy Laboratory	4
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
GEO 3043 & GEO 3051	Petrology and Petrology Laboratory	4
GEO 3063 & GEO 3071	Paleontology and Paleontology Laboratory	4
GEO 3103 & GEO 3111	Structural Geology and Structural Geology Laboratory	4

GEO 3112	Geologic Field Investigations	2
GEO 3123 & GEO 3131	Sedimentation and Stratigraphy and Sedimentation and Stratigraphy Laboratory	4
GEO 4933	Field Geology Part I	3
GEO 4943	Field Geology Part II	3
2. Select 21 additional semester credit hours from the following.		21
Students should meet with their academic advisor and/or a member of the Department of Geological Sciences to verify that they have taken the necessary prerequisites.		

GEO 3143 & GEO 3151	Economic Geology and Economic Geology Laboratory
GEO 3163	Oceanography
GEO 3173	Polar Regions and Climate Change
Polar Regions and Climate Change	
GEO 3374	Geochemistry
GEO 3383	General Geophysics
GEO 3393	Introduction to Isotope Geochemistry
GEO 4013	Volcanology
GEO 4023	Engineering Geology
GEO 4063	Environmental Geology
GEO 4093	Principles of Remote Sensing
GEO 4113 & GEO 4121	Geomorphology and Geomorphology Laboratory
GEO 4623	Groundwater Hydrogeology
GEO 4911	Independent Study
GEO 4912	Independent Study
GEO 4913	Independent Study
GEO 4951	Special Studies in Geology
GEO 4952	Special Studies in Geology
GEO 4961	Special Studies in Geology Laboratory
Special Studies in Geology Laboratory	
GEO 4953	Special Studies in Geology
GEO 4993	Honors Research

B. Courses within the College of Science

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
CS 1173	Data Analysis and Visualization using MATLAB	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
Select one of the following options:		8

Option 1:		
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
Option 2:		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	

PHY 1963 Physics for Scientists and Engineers II
& PHY 1971 and Physics for Scientists and Engineers II
Laboratory

Total Credit Hours 87

Course Sequence Guide for B.S. Degree in Geology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Geology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Geology – Recommended Four-Year Academic Plan

First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship	3
CHE 1103 General Chemistry I ¹	4
& CHE 1121	
GEO 1103 Physical Geology	4
& GEO 1111	
MAT 1214 Calculus I (core and major)	4
WRC 1013 Freshman Composition I (Q) (core)	3
Spring	
CHE 1113 General Chemistry II ¹	4
& CHE 1131	
CS 1173 Data Analysis and Visualization using MATLAB	3
GEO 1123 Life Through Time	4
& GEO 1131	
MAT 1224 Calculus II	4

Second Year

Fall	Credit Hours
GEO 2003 Mineralogy	4
& GEO 2011	
GEO 3112 Geologic Field Investigations	2
WRC 1023 Freshman Composition II (Q) (core)	3
Select one of the following:	4
PHY 1943 Physics for Scientists and Engineers I	
& PHY 1951	
PHY 1603 Algebra-based Physics I	
& PHY 1611	
Spring	
GEO 2113 Fundamentals of Geographic Information Systems (GIS)	3
GEO 3043 Petrology	4
& GEO 3051	
Component Area Option core	3
Select one of the following:	4

PHY 1963 Physics for Scientists and Engineers II
& PHY 1971
PHY 1623 Algebra-based Physics II
& PHY 1631

Third Year

Fall	Credit Hours
GEO 3123 Sedimentation and Stratigraphy	4
& GEO 3131	
POL 1013 Introduction to American Politics (core)	3
Upper-division GEO elective	3
Upper-division GEO elective	3
Spring	
GEO 3063 Paleontology	4
& GEO 3071	
GEO 3103 Structural Geology	4
& GEO 3111	
POL 1133 or 1213 Texas Politics and Society (core)	3
Upper-division GEO elective	3

Summer

GEO 4933 Field Geology Part I	3
GEO 4943 Field Geology Part II	3

Fourth Year

Fall	Credit Hours
Language, Philosophy & Culture core	3
Upper-division GEO elective	3
Upper-division GEO elective	3
American History core	3
Spring	
Creative Arts core	3
Social & Behavioral Sciences core	3
Upper-division GEO elective	3
Upper-division GEO elective	3
American History core	3

Total Credit Hours: 120.0

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Geological Sciences for scheduling of courses.

Bachelor of Arts Degree in Geology

The Bachelor of Arts degree in Geology provides opportunities to prepare for careers in fields such as earth science education, law, insurance, financial services, energy business, and environmental management. It is not recommended for students planning to pursue careers as professional geologists or graduate studies in geology or related fields.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. All major and support work courses must be completed with a grade of "C-" or better

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Geology must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Arts degree in Geology must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory
MAT 1214	Calculus I

Degree Requirements

A. Major courses

1. Required courses

GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	4
GEO 2003 & GEO 2011	Mineralogy and Mineralogy Laboratory	4
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
GEO 3043 & GEO 3051	Petrology and Petrology Laboratory	4
GEO 3063 & GEO 3071	Paleontology and Paleontology Laboratory	4
GEO 3123 & GEO 3131	Sedimentation and Stratigraphy and Sedimentation and Stratigraphy Laboratory	4

2. Select 16 semester credit hours at the upper-division level courses from among the remaining GEO course offerings. Students should meet with their academic advisor and/or a member of the Department of Geological Sciences to verify that they have taken the necessary prerequisites.

B. Courses within the College of Science

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131 or GEO 3374	General Chemistry II and General Chemistry II Laboratory Geochemistry	4
MAT 1214	Calculus I	4
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	4

PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	4
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C. Electives

Select 24 semester credit hours of electives to meet the 120 semester credit hour degree minimum with an appropriate number of credit hours at the upper-division level to meet the UTSA minimum of 39 upper-division hours

Total Credit Hours **87**

Course Sequence Guide for B.A. Degree in Geology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Geology degree requirements. This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Geology – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship	3
CHE 1103 & CHE 1121	General Chemistry I ¹	4
GEO 1103 & GEO 1111	Physical Geology	4
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

GEO 1123 & GEO 1131	Life Through Time (core and major)	4
WRC 1023	Freshman Composition II (Q) (core)	3
	Life & Physical Sciences core	3
	Creative Arts core	3

Second Year

Fall

GEO 2003 & GEO 2011	Mineralogy	4
CS 1173	Data Analysis and Visualization using MATLAB (or free elective) ³	3

Free elective 3
 Select one of the following: 4

CHE 1113 & CHE 1131	General Chemistry II ¹	
GEO 3374	Geochemistry ²	

Spring

GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
GEO 3043 & GEO 3051	Petrology	4

PHY 1603 & PHY 1611	Algebra-based Physics I	4
Free elective		3
Third Year		
Fall		
GEO 3123 & GEO 3131	Sedimentation and Stratigraphy	4
PHY 1623 & PHY 1631	Algebra-based Physics II	4
Language, Philosophy & Culture core		3
Upper-division GEO elective		3
Spring		
GEO 3063 & GEO 3071	Paleontology	4
POL 1013	Introduction to American Politics (core)	3
Upper-division GEO elective		3
Upper-division GEO elective		3
Component Area Option core		3
Fourth Year		
Fall		
Free elective		3
Free elective		3
Upper-division Free elective		3
Upper-division GEO elective		3
American History core		3
Spring		
POL 1133 or 1213	Texas Politics and Society (core)	3
American History core		3
Social & Behavioral Sciences core		3
Upper-division Free elective		3
Upper-division GEO elective		3
Upper-division GEO elective (3XX1)		1
Total Credit Hours:		120.0

- 1 These laboratory courses include a lecture component as indicated on the University Schedule of Classes.
- 2 Offered Fall semesters only.
- 3 CS 1173 is a prerequisite for GEO 2113 and can be used as a free elective.

Note: Some courses are only offered once a year; fall or spring. Check with the Department of Geological Sciences for scheduling of courses

Bachelor of Science Degree in Multidisciplinary Science

The Bachelor of Science degree in Multidisciplinary Science (MDS) is designed for future scientists or future secondary science teachers, and gives students broad training across the sciences. The MDS degree, coupled with a concentration at the upper-division level in a single science field (major requirements A and B(2), below), is ideal for future scientists interested in an interdisciplinary approach in - science. The MDS degree also offers a composite science certification track through the College of Education and Human Development (COEHD), which is designed to prepare students for a career in teaching

secondary school science (major requirements A and B(1), below). Students seeking teacher certification should contact the Interdisciplinary Education Advising and Certification Center as early in their educational program as possible, but no later than their fourth semester of study, for information about certificate requirements and admission procedures. Undergraduates seeking elementary teacher certification must complete the Interdisciplinary Studies degree.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120 hours, at least 39 of which must be at the upper-division level. All major and support work must be completed with a grade of "C-" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Multidisciplinary Science must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Multidisciplinary Science must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

BIO 1414	Biosciences II
MAT 1093	Precalculus

Degree Requirements

A. Required science courses

AST 1013	Introduction to Astronomy	3
BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313	Genetics	3
BIO 3283 & BIO 3292	Principles of Ecology and Principles of Ecology Laboratory	5
BIO 3323	Evolution	3
BIO 3413	Advanced Physiology	3
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
CHE 3214	Analytical Chemistry	4
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
GEO 3004	Rocks, Fossils, and Global Tectonics	4
GEO 3163	Oceanography	3

MAT 1093	Precalculus	3
PHY 3003	Current Research Topics in Physics	3
STA 1053	Basic Statistics	3
Select one of the following options:		8
Option 1:		
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
Option 2:		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory ¹	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory ¹	
Total Credit Hours		65

¹ Note that the prerequisites for Physics for Scientists are Calculus I and II (MAT 1214 Calculus I and MAT 1224 Calculus II). These can be included among the elective courses in sciences and mathematics.

MDS degree with Certification (composite science emphasis)

B(1). Electives to satisfy certification requirements

C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
C&I 4646	Student Teaching: Grades 8–12	6
EDP 3203	Learning and Development in the Secondary School Adolescent	3
EDP 4203	Assessment and Evaluation	3
GEM 1011	GEEMS Mathematics/Science I	1
GEM 1021	GEEMS Mathematics/Science II	1
GEM 1031	GEEMS Mathematics/Science III	1
RDG 3773	Reading and Writing Across the Disciplines–Secondary	3
Total Credit Hours		21

MDS degree without Certification:

B(2). Approved electives in geology, biology, chemistry, physics, environmental science, and/or mathematics

Select 21 semester credit hours of approved electives in geology, biology, chemistry, physics, environmental science, and/or mathematics, including a sufficient number of upper-division hours to meet the UTSA minimum of 39 upper-division hours.

Total Credit Hours 21

Students seeking an MDS degree as preparation for a graduate degree in science should follow as closely as possible the degree requirements of their chosen science as those courses are most likely to be required by graduate schools in that field. Noncertification-seeking students should, at a minimum, pursue a minor in any one or more science. It is possible through careful planning to achieve a double major in MDS and another science. All MDS students should create a four-year plan through an undergraduate academic advisor as early as possible in their course of

study, and continue to check in on a course-by-course basis should those plans change.

Course Sequence Guide for B.S. Degree in Multidisciplinary Science (without teacher certification)

This course sequence guide is designed to assist students in completing their UTSA undergraduate Multidisciplinary Science degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Multidisciplinary Science – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
GEO 1103 & GEO 1111	Physical Geology	4
MAT 1093	Precalculus (core and major)	3
STA 1053	Basic Statistics	3
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

BIO 1404	Biosciences I (core and major)	4
CHE 1103 & CHE 1121	General Chemistry I ¹	4
WRC 1023	Freshman Composition II (Q) (core)	3
Creative Arts core		3

Second Year

Fall		Credit Hours
BIO 1414	Biosciences II	4
CHE 1113 & CHE 1131	General Chemistry II ¹	4
POL 1013	Introduction to American Politics (core)	3
Language, Philosophy & Culture core		3
Social & Behavioral Sciences core		3

Spring

BIO 2313	Genetics	3
BIO 3283 & BIO 3292	Principles of Ecology	5
GEO 3163	Oceanography	3
American History core		3

Third Year

Fall		Credit Hours
AST 1013	Introduction to Astronomy	3
BIO 3323	Evolution	3
CHE 3214	Analytical Chemistry	4
Select one of the following:		4

PHY 1603 & PHY 1611	Algebra-based Physics I	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I	
Spring		
GEO 3004	Rocks, Fossils, and Global Tectonics	4
Approved elective ²		3
Approved elective ²		3
Select one of the following:		4
PHY 1623 & PHY 1631	Algebra-based Physics II	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II	
Fourth Year		
Fall		
PHY 3003	Current Research Topics in Physics	3
POL 1133 or 1213	Texas Politics and Society (core)	3
American History core		3
Approved elective ²		3
Approved elective ²		3
Spring		
BIO 3413	Advanced Physiology	3
Approved elective ²		3
Approved elective ²		3
Approved elective ²		3
Component Area Option core		3
Elective (if needed to meet 120 hour minimum) ³		1
Total Credit Hours:		120.0

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

² Approved Electives in BIO, CHE, GEO, PHY, ES, and/or MAT.

³ If a 4-credit-hour course is taken as one of the approved electives, this requirement will already have been met.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Geological Sciences for scheduling of courses.

Minor in Geology

All students pursuing the Minor in Geology must complete 21 semester credit hours. All coursework must be completed with a grade of "C-" or better.

A. Required courses

GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	4
GEO 2003 & GEO 2011 or GEO 3004	Mineralogy and Mineralogy Laboratory Rocks, Fossils, and Global Tectonics	4

B. Approved upper division geology electives

Electives - upper-division geology	9
Total Credit Hours	21

To declare a Minor in Geology, obtain advice about prerequisites about approved upper-division geology electives, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Mathematics

The Department of Mathematics offers a Bachelor of Science degree in Mathematics. The degree is offered in two concentrations: Mathematics and General Mathematical Studies. The Mathematics Concentration offers students the opportunity to prepare to provide technical support and conduct research for high-technology industries, government, and private companies. Both concentrations prepare students to pursue advanced graduate study. The General Mathematical Studies Concentration includes a component for those students wishing to obtain state certification to teach mathematics at the secondary level. The department also offers a Minor in Mathematics. Students interested in electives in Statistics, a Minor in Applied Statistics, or a Bachelor of Science degree in Statistics, should refer to the Department of Management Science and Statistics in the College of Business section of this catalog.

Bachelor of Science Degree in Mathematics

The Bachelor of Science degree in Mathematics is offered with two concentrations: Mathematics and General Mathematical Studies.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

Students choosing the General Mathematical Studies Concentration who wish to pursue teacher certification should satisfy the Core Curriculum requirements consistent with the State Board for Educator Certification.

All required and elective mathematics, computer science, and statistics courses must be completed with a grade of "C-" or better.

All candidates for this degree must fulfill the Core Curriculum requirements and the mathematics requirements, which are listed in the following pages. In addition, a candidate for the Bachelor of Science degree in Mathematics must complete the course requirements for the concentration declared by the candidate.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Mathematics must fulfill University Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Mathematics must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1214	Calculus I
MAT 1224	Calculus II

Mathematics Degree Requirements

All candidates for the Bachelor of Science degree in Mathematics, regardless of concentration, must complete the following 24 semester credit hours of required courses (this includes the 3 semester credit hours of the Core Curriculum requirement in mathematics).

MAT 1214	Calculus I (The student who is not prepared to begin MAT 1214 must take MAT 1093 Precalculus.)	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
MAT 3013	Foundations of Mathematics	3
MAT 3213	Foundations of Analysis	3
MAT 4213	Real Analysis I	3
Total Credit Hours		24

In addition, a candidate for the Bachelor of Science degree in Mathematics must complete the course requirements for the concentration declared by the candidate.

Mathematics Concentration

All candidates for this concentration must fulfill the Core Curriculum requirements, the mathematics degree requirements, as well as the course requirements necessary for this concentration.

A. Computer Science

Select one of the following:		3-4
CS 1063	Introduction to Computer Programming I	
CS 1713 & CS 1711	Introduction to Computer Programming II and Introduction to Computer Programming II Recitation	
CS 2073	Computer Programming with Engineering Applications	

B. Required courses

MAT 3613	Differential Equations I	3
MAT 3633	Numerical Analysis	3
MAT 4223	Real Analysis II	3
MAT 4233	Modern Abstract Algebra	3
STA 3003	Applied Statistics	3
STA 3513	Probability and Statistics	3

C. Upper-division courses in mathematics or statistics

Select 9 semester credits of upper-division courses in mathematics or statistics approved by the student's advisor	9
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D. Electives

Select 26 or 27 semester credit hours of electives	26-27
Total Credit Hours	57

General Mathematical Studies Concentration

All candidates for this concentration must fulfill the Core Curriculum requirements, the mathematics degree requirements, as well as the course requirements necessary for this concentration.

A. Computer Science

CS 1063	Introduction to Computer Programming I	3
or CS 2073	Computer Programming with Engineering Applications	

B. Mathematics and/or Statistics

1. Mathematics		
MAT 3103	Data Analysis and Interpretation	3
MAT 3123	Fundamentals of Geometry	3
or MAT 4263	Geometry	
MAT 3233	Modern Algebra	3
or MAT 4233	Modern Abstract Algebra	
MAT 4013	Graphing Calculator Topics	3
MAT 4113	Computer Mathematical Topics	3
MAT 4303	Capstone Course for Mathematics	3

2. Approved upper-division course in mathematics	3
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C. Required academic foundations

COM 1043	Introduction to Communication	3
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D. Electives

Select 30 semester credit hours of electives. Students seeking teacher certification should use these hours for the required certification courses. Others students should include among these an additional 6 semester credit hours of upper-division mathematics or statistics courses approved by an undergraduate advisor for the Department of Mathematics.	30
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Total Credit Hours	57
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Certification requirements for students pursuing the General Mathematical Studies Concentration are different from degree requirements. In addition to specific course requirements, teacher certification in Texas also requires passing scores on a Texas Success Initiative approved assessment instrument test and acceptable scores on the state-mandated exit competency test. Complete information may be obtained in the Teacher Certification Center at UTSA.

Course Sequence Guide for B.S. Degree in Mathematics with a Mathematics Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate Mathematics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Mathematics, Mathematics Concentration – Recommended Four-Year Academic Plan

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
	American History core	3
	Life & Physical Sciences core	3
Spring		
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (Q) (core)	3
	Life & Physical Sciences core	3
	Select one of the following:	3-4
CS 1063	Introduction to Computer Programming I	
CS 1713 & CS 1711	Introduction to Computer Programming II	
CS 2073	Computer Programming with Engineering Applications	
Second Year		
Fall		
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
	Government-Political Science core	3
	Free elective	3
	Free elective	3
Spring		
MAT 3013	Foundations of Mathematics	3
STA 3003	Applied Statistics	3
	Creative Arts core	3
	Government-Political Science core	3
	Free elective	3
Third Year		
Fall		
MAT 3613	Differential Equations I	3
STA 3513	Probability and Statistics	3
	Free elective	3
	Social & Behavioral Sciences core	3
	Upper-division MAT or STA elective	3
Spring		
MAT 3213	Foundations of Analysis	3
MAT 4233	Modern Abstract Algebra	3
	Component Area Option core	3
	Free elective	3
	Upper-division MAT or STA elective	3
Fourth Year		
Fall		
MAT 3633	Numerical Analysis	3
MAT 4213	Real Analysis I	3
	Free elective	3
	Free elective	3

Upper-division Free elective	3
Spring	
MAT 4223	Real Analysis II
	3
Free elective ¹	2-3
Upper-division MAT or STA elective	3
American History core	3
Language Philosophy & Culture core	3
<hr/>	
Total Credit Hours:	120.0

¹ Only 2 semester credit hours are needed if CS 1713 and CS 1711 are taken.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Mathematics for scheduling of courses.

Course Sequence Guide for B.S. Degree in Mathematics with a General Mathematical Studies Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate Mathematics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Mathematics, General Mathematical Studies Concentration – Recommended Four-Year Academic Plan

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
COM 1043	Introduction to Communication	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
	Life & Physical Sciences core	3
Spring		
CS 1063 or 2073	Introduction to Computer Programming I (or Computer Programming with Engineering Applications)	3
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (Q) (core)	3
	Free elective	3
	Life & Physical Sciences core	3
Second Year		
Fall		
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
	Free elective	3
	American History core	3
Spring		

MAT 3013	Foundations of Mathematics	3
MAT 3103	Data Analysis and Interpretation	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Free elective		3
Free elective		3
Third Year		
Fall		
MAT 4013	Graphing Calculator Topics	3
MAT 3123 or 4263	Fundamentals of Geometry (or Geometry)	3
POL 1013	Introduction to American Politics (core)	3
Free elective		3
Social & Behavioral Sciences core		3
Spring		
MAT 3213	Foundations of Analysis	3
MAT 3233 or 4233	Modern Algebra (or Modern Abstract Algebra)	3
Component Area Option core		3
Upper-division Free elective		3
Upper-division MAT or STA elective		3
Fourth Year		
Fall		
MAT 4213	Real Analysis I	3
MAT 4303	Capstone Course for Mathematics	3
Free elective		3
Free elective		3
Upper-division MAT elective (not MAT 3253)		3
Spring		
MAT 4113	Computer Mathematical Topics	3
Upper-division MAT or STA elective		3
American History core		3
Creative Arts core		3
Language, Philosophy & Culture core		3
Total Credit Hours:		120.0

Note: Some courses are only offered once a year; fall or spring. Check with the Department of Mathematics for scheduling of courses.

Course Sequence Guide for B.S. Degree in Mathematics with a General Mathematical Studies Concentration (with teacher certification)

This course sequence guide is designed to assist students in completing their UTSA undergraduate Mathematics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Mathematics, General Mathematical Studies Concentration with teacher certification – Recommended Four-Year Academic Plan

		Credit Hours
First Year		
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
COM 1043	Introduction to Communication	3
GEM 1011	GEEMS Mathematics/Science I	1
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Life & Physical Sciences core		3
Spring		
CS 1063 or 2073	Introduction to Computer Programming I (or Computer Programming with Engineering Applications)	3
GEM 1021	GEEMS Mathematics/Science II	1
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Second Year		
Fall		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society ¹	3
GEM 1031	GEEMS Mathematics/Science III	1
MAT 2214	Calculus III	4
MAT 3013	Foundations of Mathematics	3
American History core		3
Spring		
EDP 3203	Learning and Development in the Secondary School Adolescent	3
MAT 2233	Linear Algebra	3
MAT 3103	Data Analysis and Interpretation	3
Creative Arts core		3
Summer		
POL 1013	Introduction to American Politics (core)	3
Language, Philosophy & Culture core		3
Third Year		
Fall		
BBL 3403	Cultural and Linguistic Diversity in a Pluralistic Society ¹	3
MAT 3123 or 4263	Fundamentals of Geometry (or Geometry)	3
MAT 3233 or 4233	Modern Algebra (or Modern Abstract Algebra)	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Social & Behavioral Sciences core		3
Spring		
MAT 3213	Foundations of Analysis	3
MAT 4013	Graphing Calculator Topics	3
SPE 3603	Introduction to Special Education ¹	3

Upper-division MAT elective (not MAT 3253)		3
Component Area Option core		3
Summer		
MAT 4113	Computer Mathematical Topics	3
American History core		3
Fourth Year		
Fall		
C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
EDP 4203	Assessment and Evaluation	3
MAT 4213	Real Analysis I	3
MAT 4303	Capstone Course for Mathematics	3
RDG 3773	Reading and Writing Across the Disciplines—Secondary	3
Spring		
C&I 4646	Student Teaching: Grades 8–12	6
Total Credit Hours:		120.0

¹ BBL 3403, EDU 2103, and SPE 3603 are not required if student is in the Generating Educational Excellence in Mathematics and Science (GEEMS) program. However, these courses must be replaced with upper-division MAT/STA electives.

Note: Some courses are only offered once a year; fall or spring. Check with the Department of Mathematics for scheduling of courses.

Minor in Mathematics

All students pursuing the Minor in Mathematics must complete 24 semester credit hours. All required and elective mathematics, computer science, and statistics courses must be completed with a grade of “C-” or better.

A. Required courses

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III ¹	4
MAT 2233	Linear Algebra	3
MAT 3613	Differential Equations I ²	3

B. Approved upper-division mathematics electives

Select 6 semester credit hours of approved upper-division mathematics electives		6
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Total Credit Hours **24**

¹ For Computer Science majors, substitute CS 3333 Mathematical Foundations of Computer Science and Recitation.

² Computer Science majors may substitute 3 hours of an approved upper-division mathematics elective.

To declare a Minor in Mathematics, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor and the Undergraduate Advisor of Record for the Department of Mathematics.

Department of Physics and Astronomy

The degree programs offered by the Department of Physics and Astronomy reflect its policy of offering the opportunity for a comprehensive education of the highest quality, individualized to the needs and interests of the students. Completion of a Bachelor’s degree in Physics allows students entry into one of the highly specialized areas in science and technology, and ability to apply for positions in industry and government, as well as entry into professional and graduate schools.

- Bachelor of Science Degree in Physics (p. 228)
- Bachelor of Arts Degree in Physics (p. 230)

Bachelor of Science Degree in Physics

The Bachelor of Science degree in Physics provides opportunities for preparation for careers in industry and governmental agencies and for graduate study in physics or related fields.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. At least 39 of the total semester credit hours required for the degree must be at the upper-division level. All major and support work courses (including math, chemistry and computer science courses) must be completed with a grade of “C-” or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Physics must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements.

Core Curriculum Component Area Requirements (p. 7)

Gateway Courses

Students pursuing the Bachelor of Science degree in Physics must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

PHY 2103 Modern Physics
& PHY 2111 and Modern Physics Laboratory

PHY 2823	Mathematical Physics I	
PHY 3203	Classical Mechanics I	

Degree Requirements

A. Physics and Astronomy courses

1. Required courses completed with a grade of "C-" or better		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory	4
PHY 2823	Mathematical Physics I	3
PHY 3203	Classical Mechanics I	3
PHY 3293	Thermal Physics	3
PHY 3423	Electricity and Magnetism	3
PHY 3443	Modern Optics	3
PHY 3513	Electrodynamics	3
PHY 3343	Physics Research Laboratory	3
PHY 3583	Mathematical Physics II	3
PHY 4263	Quantum Mechanics I	3
PHY 4423	Quantum Mechanics II	3
PHY 4983	Unifying Concepts in Physics	3
2. Select 9 additional approved semester credit hours selected from the following (a maximum of 6 hours from either PHY 4911-3 or PHY 4953 may apply to this requirement):		
AST 3013	Fundamentals of Astronomy	
AST 3023	Introduction to Astrophysics	
PHY 3143	Introduction to Computational Physics	
PHY 3313	Materials Physics	
PHY 3453	Lasers: Theory and Applications	
PHY 3603	Cosmology	
PHY 4013	Relativity: Special and General	
PHY 4203	Classical Mechanics II	
PHY 4563	Biophotonics	
PHY 4603	Crystallography and Materials Characterization	
PHY 4623	Nanotechnology	
PHY 4653	Introduction to Micro and Nanotechnology	
PHY 4703	Renewable Energy: Solar Energy Convertors	
PHY 4833	Molecular Biophysics	
PHY 4843	Condensed Matter Theory	
PHY 4911	Independent Study	
PHY 4953	Special Studies in Physics	
PHY 4993	Honors Research	

B. Required courses in the College of Science

1. Required courses (excluding physics)		
CHE 1103	General Chemistry I	3
CHE 1113	General Chemistry II	3
CHE 1121	General Chemistry I Laboratory	1
CS 1063	Introduction to Computer Programming I	3
or CS 1173	Data Analysis and Visualization using MATLAB	

or CS 2073	Computer Programming with Engineering Applications	
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
MAT 3613	Differential Equations I	3
2. Additional approved courses in the College of Science		5
Total Credit Hours		87

Course Sequence Guide for B.S. Degree in Physics

This course sequence guide is designed to assist students in completing their UTSA undergraduate Physics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Physics – Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 or 1143	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory ¹	1
CS 1063, 1173, or 2073	Introduction to Computer Programming I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
CHE 1113 or 1153	General Chemistry II	3
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I (core and major)	4
WRC 1023	Freshman Composition II (Q) (core)	3

Second Year

Fall		
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II (core and major)	4
POL 1013	Introduction to American Politics (core)	3
Spring		
MAT 3613	Differential Equations I	3
PHY 2103 & PHY 2111	Modern Physics	4
PHY 2823	Mathematical Physics I	3
PHY 3203	Classical Mechanics I	3
American History core		3

Third Year**Fall**

PHY 3293	Thermal Physics	3
PHY 3423	Electricity and Magnetism	3
PHY 3443	Modern Optics	3
PHY 3583	Mathematical Physics II	3
POL 1133 or 1213	Texas Politics and Society (core)	3

Spring

PHY 3343	Physics Research Laboratory	3
PHY 3513	Electrodynamics	3
PHY 4263	Quantum Mechanics I	3
Language, Philosophy & Culture core		3
Social & Behavioral Sciences core		3

Fourth Year**Fall**

PHY 4423	Quantum Mechanics II	3
College of Sciences elective		3
Upper-division AST or PHY elective ²		3
Upper-division AST or PHY elective ²		3
American History core		3

Spring

PHY 4983	Unifying Concepts in Physics	3
College of Sciences elective		2
Upper-division AST or PHY elective ²		3
Creative Arts core		3
Component Area Option core		3

Total Credit Hours: 120.0

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

² From section A.2. of degree requirements.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Physics and Astronomy for scheduling of courses.

Bachelor of Arts Degree in Physics

The Bachelor of Arts degree in Physics provides opportunities for careers in several professional fields. It is not recommended for students planning to pursue graduate studies in physics or related fields.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All majors in physics are required to complete all required and elective physics courses with a grade of "C-" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Physics must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and

Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements.

Core Curriculum Component Area Requirements (p. 7)**Gateway Courses**

Students pursuing the Bachelor of Arts degree in Physics must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

PHY 2103	Modern Physics
& PHY 2111	and Modern Physics Laboratory
PHY 2823	Mathematical Physics I
PHY 3203	Classical Mechanics I

Degree Requirements**A. Physics and Astronomy courses****1. Required courses completed with a grade of "C-" or better**

PHY 1943	Physics for Scientists and Engineers I	4
& PHY 1951	and Physics for Scientists and Engineers I Laboratory	

PHY 1963	Physics for Scientists and Engineers II	4
& PHY 1971	and Physics for Scientists and Engineers II Laboratory	

PHY 2103	Modern Physics	4
& PHY 2111	and Modern Physics Laboratory	

PHY 2823	Mathematical Physics I	3
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PHY 3203	Classical Mechanics I	3
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PHY 3293	Thermal Physics	3
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PHY 3343	Physics Research Laboratory	3
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PHY 3423	Electricity and Magnetism	3
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2. Select two additional courses from the following: 6

AST 3013	Fundamentals of Astronomy
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AST 3023	Introduction to Astrophysics
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PHY 3143	Introduction to Computational Physics
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PHY 3313	Materials Physics
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PHY 3443	Modern Optics
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PHY 3603	Cosmology
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PHY 4013	Relativity: Special and General
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PHY 4263	Quantum Mechanics I
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PHY 4843	Condensed Matter Theory
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B. Required courses in the College of Science**1. Required courses (excluding physics)**

CHE 1103	General Chemistry I	3
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CHE 1113	General Chemistry II	3
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CHE 1121	General Chemistry I Laboratory	1
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CS 1063 or CS 1173 or CS 2073	Introduction to Computer Programming I Data Analysis and Visualization using MATLAB Computer Programming with Engineering Applications	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III	4
2. Additional approved courses from the College of Science		32
Total Credit Hours		87

Course Sequence Guide for B.A. Degree in Physics

This course sequence guide is designed to assist students in completing their UTSA undergraduate Physics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Physics – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 or 1143	General Chemistry I (core and major)	3
CHE 1121	General Chemistry I Laboratory ¹	1
CS 1063, 1173, or 2073	Introduction to Computer Programming I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

CHE 1113 or 1153	General Chemistry II	3
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I (core and major)	4
WRC 1023	Freshman Composition II (Q) (core)	3
College of Sciences elective ²		2

Second Year

Fall		
MAT 2214	Calculus III	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II (core and major)	4
Social & Behavioral Sciences core		3
American History core		3
Spring		
PHY 2103 & PHY 2111	Modern Physics	4
PHY 2823	Mathematical Physics I	3
PHY 3203	Classical Mechanics I	3
American History core		3

Component Area Option core		3
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Third Year

Fall

PHY 3293	Thermal Physics	3
PHY 3423	Electricity and Magnetism	3
College of Sciences elective ²		3
College of Sciences elective ²		3
Language, Philosophy & Culture core		3

Spring

PHY 3343	Physics Research Laboratory	3
POL 1133 or 1213	Texas Politics and Society (core)	3
College of Sciences elective ²		3
College of Sciences elective ²		3

Fourth Year

Fall

POL 1013	Introduction to American Politics (core)	3
College of Sciences elective ²		3
College of Sciences elective ²		3
College of Sciences elective ²		3
Upper-division AST or PHY elective ³		3

Spring

College of Sciences elective ²		3
College of Sciences elective ²		3
College of Sciences elective ²		3
Upper-division AST or PHY elective ³		3
Creative Arts core		3

Total Credit Hours: 120.0

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

² At least 18 semester credit hours of College of Sciences electives must be at the upper-division level.

³ From section A.2. of degree requirements.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Physics and Astronomy for scheduling of courses.

- Minor in Astronomy/Astrophysics (p. 231)
- Minor in Physics (p. 232)

Minor in Astronomy/Astrophysics

The Department of Physics and Astronomy offers a Minor in Astronomy/Astrophysics, which serves to increase the value of the student's major concentration. The minor provides a more comprehensive foundation in physics to those wishing to teach science at the middle and high school levels through applications of important physics concepts. Further, it is a key Science, Technology, Engineering and Mathematics (STEM) subject, due to its critical science, technology, and math components, combined with a popular appeal. All students pursuing the Minor in Astronomy/Astrophysics must complete 21 semester credit hours.

A. Required Courses

AST 3013	Fundamentals of Astronomy	3
AST 3023	Introduction to Astrophysics	3
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory	4

B. Select one of the following courses 3

AST 3033	Observational Techniques in Astronomy	
AST 3043	Astrochemistry	
AST 3103	Observational Astronomy Laboratory	
AST 3303	Introduction to Galactic and Extragalactic Astronomy	
AST 4203	Stellar Astrophysics	
AST 4303	Solar System Astrophysics	
PHY 3603	Cosmology	

Total Credit Hours 21

To declare a Minor in Astronomy/Astrophysics, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in Physics

The Department of Physics and Astronomy also offers a Minor in Physics, which serves to increase the value of the student's major concentration. It also provides a more solid foundation in physics to those wishing to teach science at the middle and high school levels. All students pursuing the Minor in Physics must complete 21 semester credit hours.

Required courses:

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory	4
PHY 3203	Classical Mechanics I	3
PHY 3293	Thermal Physics	3
PHY 3423	Electricity and Magnetism	3

Total Credit Hours 21

To declare a Minor in Physics, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

University College

The University College offers students the opportunity to realize their potential for academic success by becoming involved in the comprehensive First Year Experience Program. Additionally, the University College includes the Writing Program and the Air Force ROTC and Army ROTC programs. The University College also offers the Bachelor of Arts degree in Multidisciplinary Studies and the Bachelor of Science degree in Public Health.

All freshmen are admitted into University College and participate in a comprehensive First Year Experience Program designed to help transition from high school to college. In UTSA's First Year Experience students will participate in a peer mentor program, have the opportunity to enroll in linked courses, and receive guidance in selecting an appropriate major. Students must meet the following criteria in order to exit University College and transition to their respective colleges of major.

1. Complete 30 UTSA semester credit hours¹
2. Have no Texas Success Initiative (TSI) deficiencies
3. Meet all requirements to declare a major
4. Earn credit for AIS 1203 Academic Inquiry and Scholarship
5. Earn credit for WRC 1013 Freshman Composition I (Q)
6. Earn credit for the Core Curriculum Mathematics requirement
7. Complete the First Year Experience Program

Students will remain in University College until all seven exiting requirements have been met. Students within the University College will register with the freshman cohort, regardless of hours earned, unless they have a designated priority registration.

Transfer students with 30 or more hours majoring in selective programs and undeclared majors will be admitted into University College and remain in the College until they have met all requirements to declare a major. At that point, such students will transition to their appropriate college of major.

¹ There is a distinction for freshmen and freshmen transfers entering UTSA with 15 or more credit hours. Such individuals may satisfy this requirement by completing 30 total hours, 15 of which must be UTSA hours with a UTSA grade point average (GPA) of 2.5 or higher. Freshmen and freshmen transfers entering UTSA with 15 or more credit hours may be designated as University College Accelerated Students as soon as they meet the first six exiting requirements above. Upon completion of these first six requirements, University College Accelerated Students will be able to register with their appropriate cohort based upon hours earned (30-59 sophomore, 60-89 junior, etc.).

- Bachelor of Arts Degree in Multidisciplinary Studies (p. 233)
- Bachelor of Science Degree in Public Health (p. 234)

Bachelor of Arts Degree in Multidisciplinary Studies

The Bachelor of Arts degree in Multidisciplinary Studies is a multidisciplinary degree which allows students much flexibility in designing degree programs that relate to their personal academic and career goals. Students will complete the University Core Curriculum

requirements and take a cohesive set of courses from three different disciplinary areas.

The Multidisciplinary Studies major permits an interdisciplinary approach to education allowing students the opportunity to acquire a well-rounded educational background and problem-solving skills. The objectives of the program are to develop students that have a solid foundation in the content material of three different disciplines and are skilled in communication, critical thinking and analysis, investigating and solving problems, managing tasks, and relating to others. The program allows students to develop academic themes or topics that fall outside the usual disciplinary boundaries. The degree program will provide a vehicle to achieve baccalaureate degrees for those students whose interests lie in multiple areas.

This degree program is meant to encourage and support creativity, innovation, critical thinking, and integrative learning. The multidisciplinary nature of the program is designed to develop students' ability to combine different fields into a structured format. Since the program involves coursework from departments across the University, it offers students opportunities to capitalize upon diverse personal interests and talents through a combination of study and academic experiences appropriate to meet their educational and long-term career goals.

The minimum number of semester credit hours required for this degree is 120, including Core Curriculum requirement hours. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level. Students receiving a Bachelor of Arts degree in Multidisciplinary Studies may not receive a double major or a minor.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Multidisciplinary Studies must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

All candidates for the Bachelor of Arts degree in Multidisciplinary Studies must complete the following 78 semester credit hours.

A. Multidisciplinary Studies Foundation Courses

Technology Requirement. Select one of the following:	3
CS 1033	Microcomputer Applications
IS 1403	Business Information Systems Fluency
Communications Requirement. Select one of the following:	3
COM 1043	Introduction to Communication
COM 1053	Business and Professional Speech
COM 2113	Public Speaking
ENG 2413	Technical Writing

B. Multidisciplinary Studies Fields of Study

All candidates for the degree must select courses to satisfy the requirements of the following three focus areas based on three distinct disciplines: 48

1. Focus Area One: 18 semester credit hours of courses within a single discipline with at least 12 hours at the upper-division level.
 2. Focus Area Two: 15 semester credit hours of courses within a single discipline with at least 9 hours at the upper-division level.
 3. Focus Area Three: 15 semester credit hours of courses within a single discipline with at least 9 hours at the upper-division level.
- Courses selected to satisfy a focus area must be approved by the Multidisciplinary Studies Program Coordinator and Dean of University College. Furthermore, the courses used to satisfy each focus area must be completed with at least a 2.00 grade point average. At least one focus area must be selected from a discipline offered by the College of Liberal and Fine Arts or the College of Sciences. No more than one focus area can be selected from a discipline offered by the College of Business.

C. Seminar for Multidisciplinary Studies		
MDS 4983	Senior Seminar for Multidisciplinary Studies	3

D. Free Electives
 All candidates for this degree must complete 21 semester hours of free electives, at least 6 of which must be at the upper-division level.

Total Credit Hours **78**

All candidates for this degree must complete 21 semester hours of free electives, at least 6 of which must be at the upper-division level.

Course Sequence Guide for B.A. Degree in Multidisciplinary Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate Multidisciplinary Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Multidisciplinary Studies – Four-Year Academic Plan

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Focus Area 1 lower-division course		3
Mathematics core		3
Spring		
CS 1033 or IS 1403	Microcomputer Applications	3
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Focus Area 2 lower-division course		3
Life & Physical Sciences core		3
Second Year		
Fall		

COM 1043, 1053, 2113, or ENG 2413	Introduction to Communication	3
POL 1013	Introduction to American Politics (core)	3
Focus Area 1 lower-division course		3
Focus Area 3 lower-division course		3
Life & Physical Sciences core		3
Spring		
POL 1133 or 1213	Texas Politics and Society (core)	3
Focus Area 2 lower-division course		3
Focus Area 3 lower-division course		3
Creative Arts core		3
Language, Philosophy & Culture core		3
Third Year		
Fall		
ECO 2003, 2013, or 2023	Economic Principles and Issues (core)	3
Focus Area 1 upper-division course		3
Focus Area 2 upper-division course		3
Free elective		3
Component Area Option core		3
Spring		
Focus Area 1 upper-division course		3
Focus Area 2 upper-division course		3
Focus Area 3 upper-division course		3
Free elective		3
Free elective		3
Fourth Year		
Fall		
Focus Area 1 upper-division course		3
Focus Area 2 upper-division course		3
Focus Area 3 upper-division course		3
Free elective		3
Free elective (upper division)		3
Spring		
MDS 4983	Senior Seminar for Multidisciplinary Studies	3
Focus Area 1 upper-division course		3
Focus Area 3 upper-division course		3
Free elective		3
Free elective (upper-division)		3
Total Credit Hours:		120.0

Bachelor of Science Degree in Public Health

The Bachelor of Science degree in Public Health is offered with an interdisciplinary curriculum designed for students who are interested in gaining knowledge and developing skills needed in a variety of health care related areas, including biostatistics, environmental science, health and public administration, epidemiology, and health behavior. The degree requirements consist of the university core curriculum, major core requirements, elective courses in areas of specializations, a foreign language, and an internship. The major core is multidisciplinary introducing students to the fundamental subjects and the essential

knowledge necessary for working in any field related to public health. The elective courses allow students to concentrate in one of the areas of specialization.

The degree program prepares students for health care related careers in government, private, and nonprofit organizations. In addition, graduates of this program will be competent in pursuing graduate studies in a variety of academic fields, including public health, allied health, public policy, nutrition, business, and law. It can also provide students with a pathway to advanced studies in medicine or dentistry if the students use the electives to fulfill the additional admission requirements for medical and dental schools.

The degree program is offered in two concentrations: (1) Epidemiology and Disease Control and (2) Health Promotion and Behavioral Science. The Epidemiology and Disease Control concentration is offered by the Department of Sociology of the College of Liberal and Fine Arts (COLFA) and the Health Promotion and Behavioral Science concentration is offered by the Department of Kinesiology, Health, and Nutrition of the College of Education and Human Development (COEHD). Bachelor of Science in Public Health majors will be advised by the Life and Health Sciences Advising Center.

The minimum number of semester credit hours required for this degree, including Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

Core Curriculum requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Public Health must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see below.

STA 1053 may be used to satisfy the core requirement in Mathematics as well as a major requirement. BIO 1404 and BIO 1414 may be used to satisfy the core requirement in Natural Sciences as well as major requirements.

Core Curriculum Component Area Requirements (p. 7)

Degree Requirements

All candidates for the Bachelor of Science degree in Public Health must complete the following 87 semester credit hours, which includes 9 semester credit hours of core curriculum requirements.

A. Public Health Foundation courses.

All candidates for this degree must complete the following 38 semester credit hours of coursework:

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
HTH 3503	Theories of Health Behavior	3
HTH 4503	Human Disease and Epidemiology	3
HTH 4543	Environmental Health and Safety	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3

PUB 1113	Introduction to Public Health	3
PUB 2113	Data Management in Public Health	3
SOC 3223	Population Dynamics and Demographic Techniques	3
SOC 4043	Global Health	3
SOC 4053	Health Care System	3
STA 1053	Basic Statistics	3

B. Public Health Concentrations

All candidates for the degree in Public Health must complete the requirements for one of the following concentrations. 18

1. Epidemiology and Disease Control Concentration

SOC 3323	Introduction to Social Research
SOC 4683	Health Disparities
Select at least 12 semester hours of the following:	
ANT 3523	Medical Anthropology
BIO 2083	Human Anatomy
BIO 2091	Human Anatomy Laboratory
BIO 2103	Human Physiology
BIO 2111	Human Physiology Laboratory
BIO 2313	Genetics
BIO 2322	Genetics Laboratory
BIO 3413	Advanced Physiology
BIO 3422	Advanced Physiology Laboratory
BIO 3433	Neurobiology
BIO 3613	The Biology of Aging
BIO 3713	Microbiology
BIO 3722	Microbiology Laboratory
GRG 3443	Medical Geography
PUB 3413	Behavioral Epidemiology
PUB 3613	Etiology 1: Epidemiologic Methods to Investigate Outbreaks and New Epidemics (Investigate Outbreaks and New Epidemics)
PUB 4613	Etiology 2: Epidemiologic Methods to Investigate Chronic Disease, Exposure, and Risk (Investigate Chronic Disease, Exposure, and Risk)
SOC 3213	Medical Sociology
SOC 4073	Social and Behavioral Theories in Public Health

2. Health Promotion and Behavioral Science Concentration

Select at least 18 semester credit hours from the following list of courses:

ANT 3523	Medical Anthropology
BIO 2003	Biology of Human Reproduction
BIO 2043	Nutrition
BIO 3613	The Biology of Aging
BIO 4813	Brain and Behavior
HTH 3043	Principles of Weight Management
HTH 3513	Community Health
HTH 3523	Worksite Health Promotion
HTH 3533	Drugs and Health
HTH 3543	Growth and Development
HTH 3553	Emotional Wellness
HTH 3563	Child and Adolescent Health Promotion
HTH 4513	Consumer Health

HTH 4523	Understanding Human Sexuality	
HTH 4533	Nutrition and Health	
KIN 2123	Fitness and Wellness Concepts	
KIN 4023	Exercise Psychology	
PSY 4253	Psychology of Health	
SOC 2023	Social Context of Drug Use	
SOC 3213	Medical Sociology	

C. Advanced Public Health Requirement

All candidates for this degree must complete 6 hours of an internship in public health.

PUB 4933	Public Health Internship (repeated once)	6
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D. Foreign Language

All candidates for this degree must complete 6 hours of course-work in a single foreign language. 6

E. Free Electives

All candidates for this degree must complete up to 19 hours of free electives to meet the 120 hour minimum for the degree, including a sufficient number of electives at the upper-division level to meet the UTSA minimum of 39 upper-division hours. 19

Total Credit Hours 87

All candidates for this degree must complete up to 20 hours of free electives to meet the 120 hour minimum for the degree, including a sufficient number of electives at the upper-division level to meet the UTSA minimum of 39 upper-division hours.

Course Sequence Guide for B.S. Degree in Public Health

This course sequence guide is designed to assist students in completing their UTSA undergraduate Public Health degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Public Health, Epidemiology and Disease Control Concentration – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
PUB 1113	Introduction to Public Health	3
SOC 1013	Introduction to Sociology (core)	3
STA 1053	Basic Statistics (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3

Spring

BIO 1404	Biosciences I (core and major)	4
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Language, Philosophy & Culture core		3

Second Year

Fall

HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
HTH 4503	Human Disease and Epidemiology	3
Free elective		3
Free elective		3
Free elective		3

Spring

BIO 1414	Biosciences II (core and major)	4
ECO 2003, 2013, or 2023	Economic Principles and Issues (core)	3
SOC 3223	Population Dynamics and Demographic Techniques	3
PUB 2113	Data Management in Public Health	3
Creative Arts core		3

Third Year

Fall

MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
POL 1013	Introduction to American Politics (core)	3
SOC 4043	Global Health	3
Free elective (upper-division)		3
Foreign language (semester I)		3

Spring

HTH 4543	Environmental Health and Safety	3
POL 1133 or 1213	Texas Politics and Society (core)	3
SOC 3323	Introduction to Social Research	3
SOC 4053	Health Care System	3
Foreign language (semester II)		3

Fourth Year

Fall

HTH 3503	Theories of Health Behavior	3
PUB 4933	Public Health Internship (repeated)	6

Concentration course (upper-division)	3
Concentration course (upper-division)	3

Spring

SOC 4683	Health Disparities	3
Concentration course (upper-division)	3	
Concentration course (upper-division)	3	
Free elective (upper-division)	3	
Free elective (to meet 120 hour minimum)	1	

Total Credit Hours: 120.0

¹ May be repeated in a different semester.

B.S. in Public Health, Health Promotion and Behavioral Science Concentration – Four-Year Academic Plan

First Year

Fall Credit Hours

AIS 1203	Academic Inquiry and Scholarship (core)	3
PUB 1113	Introduction to Public Health	3
SOC 1013	Introduction to Sociology (core)	3
STA 1053	Basic Statistics (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Spring		
BIO 1404	Biosciences I (core and major)	4
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Language, Philosophy & Culture core		
Second Year		
Fall		
BIO 1414	Biosciences II (core and major)	4
HIS 1043, 1053, or 2053	United States History: Pre-Columbus to Civil War Era (core)	3
HTH 3503	Theories of Health Behavior	3
POL 1133 or 1213	Texas Politics and Society (core)	3
Visual & Performing Arts core		
Spring		
ECO 2003, 2013, or 2023	Economic Principles and Issues (core)	3
PUB 2113	Data Management in Public Health	3
SOC 3223	Population Dynamics and Demographic Techniques	3
Free elective		
Free elective		
Third Year		
Fall		
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
SOC 4043	Global Health	3
Free elective		
Free elective		
Foreign language (semester I)		
Spring		
HTH 4503	Human Disease and Epidemiology	3
HTH 4543	Environmental Health and Safety	3
SOC 4053	Health Care System	3
Concentration course		
Foreign language (semester II)		
Fourth Year		
Fall		
Concentration course		
Concentration course		
Concentration course		
Free elective (upper-division)		
Free elective (upper-division)		
Spring		
PUB 4933	Public Health Internship (repeated)	6

Concentration course (upper-division)	3
Concentration course (upper-division)	3
Free elective (to meet 120 hour minimum)	1
<hr/>	
Total Credit Hours:	120.0

Air Force Reserve Officer Training Corps Program

UTSA students may enroll in courses that are required in order to become a commissioned officer in the United States Air Force. The Air Force Reserve Officer Training Corps (ROTC) is voluntary and open to all qualified students, male and female. All courses are held on the UTSA campus.

Trinity University, St. Mary's University, University of the Incarnate Word, Our Lady of the Lake University, or any Alamo Colleges student may enroll in Air Force ROTC at UTSA. These students will attend ROTC classes on the UTSA campus.

Nursing students at The University of Texas Health Science Center may also enroll in Air Force ROTC at UTSA.

To obtain a commission as an officer in the United States Air Force, a baccalaureate degree in one of the disciplines offered by UTSA and completion of a Four-Year AFROTC Program is required. The full four-year program may be tailored down to less than four years based on the student's academic progress and the future needs of the Air Force. For complete details on completing AFROTC in less than four years, contact an Air Force ROTC advisor at 210-458-4624. Walk-ins are also welcome on the first floor of the Plaza Norte Building (PNB), Room 1.220.

Credit for aerospace studies courses may be applied toward a baccalaureate degree, but are generally classified as free electives. There is a maximum number of semester credit hours of aerospace studies that may be applied to the degree requirements for each major. Credit for aerospace studies courses awarded by another accredited college or university is accepted by UTSA as credit, within the same limitations as aerospace studies credit earned at UTSA.

Program Requirements

This program does not require a formal application for admission and consists of 16 semester credit hours of aerospace studies. Any student wishing to participate in the freshman- and sophomore-level courses of Air Force ROTC may enroll for these classes at the same time and in the same manner as for other UTSA courses. The freshman and sophomore courses comprise the General Military Course (GMC). Membership as a cadet in the GMC does not confer any military status or commitment upon the student. During the GMC, students can compete for admission to the Professional Officer Course (POC), which is described below. Cadets in the Four-Year Program attend a paid four-week field training course the summer between their sophomore and junior years.

All students in Air Force ROTC are issued books and uniforms for use in ROTC classes. In addition, all POC students enlist in the Air Force Reserve and receive a monthly subsistence allowance.

A required leadership laboratory graded on a pass/fail basis is conducted in conjunction with all aerospace studies courses. This laboratory offers students the opportunity to learn and practice the skills and techniques required to be an Air Force officer within a realistic Air Force

organizational framework. It also provides cadets with opportunities to learn about the conduct of Air Force missions and operations through guest lectures and field trips. Cadets are also required to attend physical fitness training a minimum of two times a week which will help prepare them to pass the required physical fitness test.

Cadets may apply for Air Force ROTC scholarships. Three-and-a-half-, three-, two-and-a-half-, and two-year scholarships are available to cadets who meet the basic minimum requirements (achieving and maintaining a 2.5 grade point average, passing a physical fitness test, and passing a physical). Students with questions are encouraged to come by PNB 1.220 or call an Air Force ROTC scholarship advisor at 210-458-4624.

Minor in Aerospace Studies

This minor is designed to enhance the aerospace studies (Air Force Reserve Officer Training Corps) curriculum. A Minor in Aerospace Studies (ASC) will develop a well-rounded perspective of a future Air Force officer's role and decision-making ability in political, sociological, historical, and geographical arenas.

All students pursuing a Minor in Aerospace Studies must complete 20 semester credit hours.

A. Required core courses

ASC 2031	The Evolution of United States Air Force Air and Space Power I	1
ASC 2041	The Evolution of United States Air Force Air and Space Power II	1

B. Additional courses

Select 3 of the following, two of which must be at the upper-division level): 9

ASC 1031	The Foundation of the United States Air Force I	
ASC 1041	The Foundation of the United States Air Force II	
ASC 3013	Air Force Leadership Studies I	
ASC 3023	Air Force Leadership Studies II	
ASC 4013	National Security Affairs/Preparation for Active Duty I	
ASC 4023	National Security Affairs/Preparation for Active Duty II	

C. Additional courses

Select 3 of the following, 2 of which must be at the upper-division level 9

GRG 1023	World Regional Geography	
GRG 3314	Introduction to Geographic Information Systems	
GRG 3643	Political Geography	
HIS 3543	History of Modern Warfare	
HIS 3823	History of American Foreign Relations	
POL 1213	Civil Rights in Texas and America	
POL 2603	International Politics	
POL 3293	Political Movements	
POL 3403	European Governments	
POL 3433	Governments and Politics of Southeast Asia	
POL 3443	Governments and Politics of East Asia	
POL 3463	Politics of the Third World	
POL 3493	Politics of the Middle East	
POL 3503	American Foreign Policy since World War II	
POL 3523	Force in International Politics	

POL 3563 Current Issues in World Politics

PSY 2533 Social Psychology

Total Credit Hours

20

To declare a Minor in Aerospace Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult the professor of aerospace studies in University College in conjunction with an advisor in the office of Undergraduate Studies Support and Technology Services.

Army Reserve Officer Training Corps Program

To obtain a commission as an officer in the United States Army, students must complete either the Four-Year Program or the Two-Year Program in Military Science and be a full-time student pursuing a baccalaureate or graduate degree in one of the disciplines offered by UTSA.

Credit for military science courses may be applied toward a baccalaureate degree, but mainly as free electives. Each major stipulates a maximum number of hours of military science that may be applied toward the degree requirements. Credit for military science courses awarded by another accredited college or university is accepted by UTSA as credit, within the same limitations as military science credit earned at UTSA.

Four-Year Program

This program consists of 31 semester credit hours of military science courses and is offered in two parts: a Basic Course and an Advanced Training Course. Registration is accomplished at the same time and in the same manner as for other UTSA courses. The Basic Course consists of the first- and second-year courses: MSC 1012/MSC 1001, MSC 1122/MSC 1101, MSC 2012/MSC 2011, and MSC 2022/MSC 2021, which are designed for beginning students who want to qualify for entry into the Advanced Training Course and those who may want to try military science without incurring a military commitment. A number of popular and challenging extracurricular activities are associated with these courses. Students can qualify for entry into the Advanced Training Course by completing the Leader's Training Course, a paid summer internship program.

Students may compress the Basic Course into one academic year with the approval of the professor of military science. The Basic Course may be waived without credit for students with prior military service and/or junior ROTC.

Two-Year Program

This program consists of the Advanced Training Course, which incorporates the last two years of the Four-Year Program. The Advanced Training Course consists of MSC 3013, MSC 3023, MSC 3033, MSC 4013, and MSC 4023 and their associated laboratory courses. It is open only to students who have completed the Basic Course or earned placement credit. The Advanced Training Course is designed to qualify a student for a commission as an officer in the United States Army. Students must complete MSC 3013/MSC 3011, MSC 3023/MSC 3021, MSC 4013/MSC 4011, and MSC 4023/MSC 4021 and the 31-day paid leadership developmental advanced course in the summer, usually between the junior and senior years. Courses must be taken in sequence

unless otherwise approved by the professor of military science. Students receive a stipend each month during the school year.

The Army ROTC program offers competitive scholarships for up to four years to select students. These scholarships provide tuition, fees, book allowance and a monthly subsistence allowance.

Participation in a leadership laboratory is required in conjunction with all courses. The laboratory provides the opportunity to acquire leadership skills and experiences that will enhance a student's ability to perform as an Army officer.

All ROTC classes require each enrolled student to participate in physical fitness training and to take the Army Physical Fitness Test each semester.

Students enrolled in Army ROTC courses are furnished, free of charge, complete uniforms, texts, and necessary equipment.

The program requirements for the Basic and Advanced courses are as follows:

MSC 1001	Introduction to Army ROTC Laboratory	1
MSC 1012	Introduction to Army ROTC	2
MSC 1101	Introduction to Tactical Leadership Laboratory	1
MSC 1122	Introduction to Tactical Leadership	2
MSC 2011	Foundations of Leadership Laboratory	1
MSC 2012	Foundations of Leadership	2
MSC 2021	Foundations of Tactical Leadership Laboratory	1
MSC 2022	Foundations of Tactical Leadership	2
MSC 3011	Leading Small Organizations I Laboratory	1
MSC 3013	Leading Small Organizations I	3
MSC 3021	Leading Small Organizations II Laboratory	1
MSC 3023	Leading Small Organizations II	3
MSC 3033	American Military History	3
MSC 4011	Adaptive Leadership Laboratory	1
MSC 4013	Adaptive Leadership	3
MSC 4021	Leadership in a Complex World Laboratory	1
MSC 4023	Leadership in a Complex World	3
Total Credit Hours		31

Minor in Military Management and Leadership

This minor is designed to enhance the military science (Army Reserve Officer Training Corps) curriculum. A Minor in Military Management and Leadership (MSL) will develop a well-rounded perspective of a future Army officer's role and decision-making ability in political, sociological, historical, and geographical arenas.

All students pursuing the minor must complete 21 semester credit hours.

A. Core Military Science and Leadership coursework

MSC 3013	Leading Small Organizations I	3
MSC 3023	Leading Small Organizations II	3
MSC 4013	Adaptive Leadership	3
MSC 4023	Leadership in a Complex World	3

B. Select 3 of the following: 9

GLA 3013	Introduction to Global Analysis	
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GLA 4013	The Intelligence Community and Global Affairs	
GRG 3643	Political Geography	
HIS 2543	Introduction to Islamic Civilization	
HIS 2553	Introduction to East Asian Civilization	
HIS 3543	History of Modern Warfare	
HIS 3823	History of American Foreign Relations	
MGT 3013	Introduction to Organization Theory, Behavior, and Management	
POL 3433	Governments and Politics of Southeast Asia	
POL 3463	Politics of the Third World	
POL 3493	Politics of the Middle East	
POL 3523	Force in International Politics	
POL 3563	Current Issues in World Politics	
Total Credit Hours		21

To declare a Minor in Military Management and Leadership, obtain advice, or seek approval of substitutions for course requirements, students should consult the professor of military science in University College in conjunction with an advisor in the office of Undergraduate Studies Support and Technology Services.

First Year Experience Program

The First Year Experience Program (<http://utsa.edu/fye>) offers programming for first-year students that is designed to ease the transition from high school to college and facilitate academic and personal success at UTSA. Specifically, the First Year Experience Program provides a peer mentor program, linked-course offerings, and guidance in choosing an appropriate major.

Writing Program

Writing Program courses are designed to help students become the most proficient writers possible. The courses stress the writing process, along with purpose, audience, correctness, research techniques, and visual layout. Integrated Reading and Writing is designed to prepare students for success in Freshman Composition. Freshman Composition I focuses primarily on informative academic writing and introduces persuasive writing, while Freshman Composition II focuses on argument and persuasion. Freshman Composition I and II papers emphasize the use of source material and appropriate documentation of that material. All of the classes include an oral component, providing time for students to practice and sharpen their oral presentation skills. These courses prepare students for demands of the academic and professional worlds. Freshman Composition I and II are also enhanced with quantitative literacy. In addition, WRC 3013 Writing Strategies for the Pre-law Student and WRC 4123 Topics in Writing further prepare students for careers in which writing is a critical skill.

Honors College

The mission of the Honors College is to provide enhanced educational opportunities for selected, motivated, enthusiastic, diverse, and inquisitive students and to foster the pursuit of excellence in undergraduate higher education. The underlying philosophy of the program is that well-educated individuals should understand broad, interdisciplinary perspectives while demonstrating expertise in their chosen field.

The Honors College is open to students from all academic disciplines. The Honors College has different options for students interested in pursuing an Honors degree. Regardless of the track chosen, members of the Honors College pursue a rigorous academic program which satisfies all requirements of their academic departments and colleges and goes beyond those requirements to enhance learning. The Honors College offers small classes with greater opportunities for student participation, increased student-faculty contact, more individual attention, lively discussions of important issues, special interdisciplinary seminars, opportunities for study abroad, community service and internships, and supervised capstone experiences, all designed to challenge talented students.

Throughout a student's program of study, the Honors College emphasizes breadth of academic experience. In the junior and senior years, Honors students are encouraged to gain expertise in their academic field through Honors work in the major and an Honors capstone experience. Students who pursue Highest Honors produce an honors capstone project under the direction of a faculty member from the student's major department.

Participation in the Honors College supplements, but does not replace, work in a major field. Credits earned in Honors College courses, however, may also be used to satisfy Core Curriculum requirements or other degree requirements. The Honors College Advising Center assists in assuring that students meet all requirements for their degree plans.

Admission and Retention

Admission

Students must make special application to be considered for admission to the Honors College either as an entering freshman or as a continuing UTSA or transfer student. In general, threshold application requirements for incoming freshmen are a composite SAT (critical reading and math only) of 1200 or above, a composite ACT score of 27 or above, and/or graduation in the top 10 percent of the high school class. However, the Honors College applies a holistic review approach to student admission by considering such factors as writing skills, student leadership, special skills and abilities, and special circumstances. Therefore, students whose SAT, ACT, or class rank do not meet the threshold requirement may still gain admission if they offer a compelling reason why they should be part of the program, just as students who meet those requirements are not guaranteed admission. For continuing UTSA students and transfer students, eligibility to apply is based on a college grade point average (GPA) of 3.4 or better on a minimum of 15 hours of college coursework (excluding dual credit). Admission is competitive and contingent upon the pool of applicants for any given year. Admission information is posted online at <http://honors.utsa.edu/>.

Retention in the Honors College

After being accepted into the Honors College, a student must maintain a minimum UTSA GPA of 3.25 and demonstrate adequate progress toward completion of the Honors degree requirements. A student is considered to be in good standing if he or she maintains a minimum UTSA grade point average of 3.25. Only students in good standing qualify for Honors graduation.

Students whose UTSA grade point average falls below 2.75 will automatically be declared academically ineligible for Honors College membership. Students whose UTSA grade point average falls below 3.25 but is above 2.75 are placed on Honors probation, and they will be allowed to retain membership in the Honors College until their UTSA grade point average reaches 3.25, as long as their grade point average in each subsequent term is 3.25 or above. If a student on probation earns a term GPA of less than 3.25, he or she will be declared academically ineligible for Honors College membership.

Students who have been declared academically ineligible for Honors College membership may apply for readmission if they have attained a minimum UTSA grade point average of 3.25.

Dual College Membership

All Honors College students are also members of a degree-granting college. Admission to the Honors College is independent of admission to any other academic unit.

Facilities and Services

The UTSA Honors College provides the following opportunities to members of the College:

Advising and Priority Registration

The Honors College Advising Center provides academic advising for all honors students. Honors College students are given priority registration if they register for the following semester through the Honors College and have completed at least one Honors course in the past year or include an Honors course in their schedule.

Honors Scholarships

The Honors College, in conjunction with the UTSA Scholarship Office, annually awards numerous Honors scholarships. Many Honors scholarships are renewable for up to three years for students who maintain the requisite 3.25 grade point average and complete an Honors course each semester. More information on scholarships is available at <http://honors.utsa.edu/scholarships/index.php>.

Honors Undergraduate Research Programs

The Honors Undergraduate Research Program assists students in finding research assistantships in their academic disciplines. In addition, the Honors College Research Program provides students working on research with financial assistance for their projects.

Honors Study Abroad

The Honors Study Abroad Program works with the Office of International Programs to offer opportunities for Honors students to acquire new knowledge and understanding of the people, events, movement, ideas, and objects of cultures other than their own. Scholarships are available through the International Education Fund.

Honors Internships

Honors students are encouraged to work in their fields prior to graduation. Internships may be assigned locally, nationally, and internationally. Students may earn credit for Honors internship experiences.

Undergraduate and Graduate Fellowships

The Honors College coordinates on-campus efforts to assist graduating students interested in applying for graduate awards such as Rhodes Scholarships, Marshall Scholarships, Mitchell Scholarships, Fulbright Scholarships, National Science Foundation (NSF) Fellowships, and Ford Foundation Diversity Fellowships. Additionally, the Honors College staff identifies and assists students interested in undergraduate awards such as Harry S. Truman Scholarships and Goldwater Scholarships.

Participation in Honors Councils

The UTSA Honors College is an institutional member of the National Collegiate Honors Council (NCHC), the Great Plains Honors Council (GPHC), and the Council of Honors Administrators in Texas (CHAT). These organizations support honors education in the United States and address issues that face higher education and honors programs across the country. Honors students are encouraged to participate in these organizations and are, thus, able to meet and interact with honors students from across the region and nation.

Recognition for Honors Graduation

Members of the Honors College who complete the requirements for any form of College Honors qualify to graduate with an Honors College diploma and to participate in a special Honors College graduation ceremony where they receive an Honors stole to wear with their academic regalia. Recognition for Honors graduation includes a notation on the transcript and diploma and mention in the commencement bulletin.

Honors College Requirements

To graduate with an Honors College diploma, a student must be enrolled in the Honors College and must have a minimum UTSA grade point average of 3.25 at the time of graduation.

Business Honors

Bachelor of Business Administration (B.B.A.) majors who have been admitted to the Honors College may earn Business Honors if they maintain a minimum UTSA grade point average of 3.25 and complete an Honors section of five of the Common Body of Knowledge (CBK) courses. Business Honors classes emphasize class discussion, presentations, and business research.

General Honors

General Honors is designed to provide students with a broad, interdisciplinary Honors experience, primarily through Honors core curriculum coursework. Because the General Honors experience is targeted primarily at lower-division Honors coursework, students are only eligible to earn General Honors if they enter the Honors College with fewer than 30 hours (not including AP, CLEP, or dual credit hours).

General Honors Requirements

Honors Coursework

- | | |
|------------------------|---|
| 1. Required coursework | 3 |
|------------------------|---|

AIS 1203	Academic Inquiry and Scholarship (must be taken in an Honors section)	
2. Select one of the following:		3
HON 3223	Honors Seminar in Social & Behavioral Sciences	
HON 3233	Honors Seminar in Arts & Humanities	
HON 3243	Honors Seminar in Business & the Professions	
HON 3253	Honors Seminar in the Sciences	
3. Five additional Honors elective courses, including no more than two courses of Honors contract coursework		15
Total Credit Hours		21

Leadership Honors

Leadership Honors is designed to provide students with the opportunity to expand their leadership capabilities and to explore possibilities for enhancing learning capacities and strategic thinking. Students who pursue Leadership Honors have the opportunity to explore a new model of leadership that makes sense in the emerging competitive environment in which humans work and live. Students are asked to enhance their understanding of leadership and hone their personal leadership skills through coursework and action. Students who select to follow Leadership Honors may select from two different options, one that involves students in the College of Business's Leadership Challenge program and one that involves students in the University of Texas System's Archer Fellows Program.

Leadership Honors Requirements

Leadership Honors Coursework

1. Required coursework		3
AIS 1203	Academic Inquiry and Scholarship (must be taken in an Honors section)	
2. Required Honors coursework. Select one of the following options:		18
Option 1		
MGT 4953	Special Studies in Management	
HON 4933	Honors Internship (or an internship in the major)	
12 hours of elective Honors coursework, including no more than 6 hours of Honors contract work		
Option 2		
HON 3513	Policy-Making Process	
HON 3523	Beyond Congress and the White House	
HON 3533	Advocacy in Applied Settings	
HON 4936	Honors Internship	
3 hours of elective Honors coursework		
Total Credit Hours		21

Highest Honors

Highest Honors is the most rigorous and most prestigious Honors degree program available through the Honors College. What distinguishes Highest Honors from the other Honors options is the opportunity to pursue greater depth in one's academic field. To earn Highest Honors, students must complete an Honors Thesis under the supervision of a capstone advisor. The Honors thesis must be signed by a three-member committee approved by the Assistant Director for Undergraduate Research.

Highest Honors Requirements

Honors Coursework ¹

1. Required coursework	3
AIS 1203 Academic Inquiry and Scholarship (must be taken in an Honors section) ²	
2. Select two of the following:	6
HON 3223 Honors Seminar in Social & Behavioral Sciences	
HON 3233 Honors Seminar in Arts & Humanities	
HON 3243 Honors Seminar in Business & the Professions	
HON 3253 Honors Seminar in the Sciences	
HON 3513 Policy-Making Process	
HON 3523 Beyond Congress and the White House	
HON 3533 Advocacy in Applied Settings	
3. Select 21 semester credit hours of Honors elective coursework, including no more than 9 semester credit hours of Honors contract coursework. (It is highly recommended that students complete 6 hours of Honors Capstone Project to count toward their 21 hours of Honors elective coursework.)	21
4. Completion of an Honors thesis	
Total Credit Hours	30

- ¹ Students who enter with 45+ hours may be granted a waiver of 6 hours of Honors coursework to reduce the required number of Honors hours from 30 to 24 hours. This reduction of hours will be reflected in section 3 of the Highest Honors requirements, reducing the number of hours from 21 to 15.
- ² Students who enter with 45+ hours may petition to substitute an additional Honors Seminar to replace AIS 1203 if they have already taken AIS 1203 or enter the College with core curriculum requirements complete.

International Distinction

Students who have been admitted to the Honors College and pursue any of the Honors distinctions may also qualify for graduation with international distinction. Students qualify for graduation with international distinction if they: (1) complete all the requirements for Business Honors, General Honors, Leadership Honors, or Highest Honors; and (2) either master a foreign language at the 2023 level or above or participate in a study-abroad experience for at least one Spring or Fall semester.

Course Descriptions

Academic Inquiry and Scholarship (AIS)

Academic Inquiry and Scholarship (AIS) Courses

AIS 1203. Academic Inquiry and Scholarship. (3-0) 3 Credit Hours.

A general survey of scholarship practiced within three broad cultures of inquiry: the Humanities, Social Sciences and Natural Sciences.

Through a cross-disciplinary framework, this course explores the diverse ideas, values, and practices used by various disciplines to investigate and organize their subject matter and create knowledge. Students will consider and compare the assumptions, methods, ethics, and impact of inquiry and scholarship within these three broad cultures of inquiry. Students will examine, compare, and contrast the intellectual endeavors that influence society and human experience. This course is required to fulfill the Core Curriculum First Year Experience requirement.

Accounting (ACC)

Accounting (ACC) Courses

ACC 2003. Foundations of Accounting. (3-0) 3 Credit Hours.

A study of accounting as the language of business. The focus is on the use of accounting information for decision making. This course is designed for nonbusiness majors and cannot be applied toward a degree in the College of Business.

ACC 2013. Principles of Accounting I. (3-0) 3 Credit Hours. (TCCN = ACCT 2301)

An introduction to business external financial reporting designed to create an awareness of the accounting concepts and principles used in preparing the three basic financial statements: the income statement, balance sheet, and statement of cash flow. The course is designed for all business students, whether future users or preparers of accounting information.

ACC 2033. Principles of Accounting II. (3-0) 3 Credit Hours. (TCCN = ACCT 2302)

Prerequisite: ACC 2013. An introduction to the determination, development, and uses of internal accounting information needed by business management to satisfy customers while controlling and containing costs. The course is designed for all business students, whether future users or preparers of accounting information.

ACC 3023. Intermediate Accounting I. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in both ACC 2013 and ACC 2033, successful completion of the Principles of Accounting Competency Exam (refer to Department of Accounting website), and declared major in the College of Business or approval of Department Chair and Dean of the College. An in-depth study of promulgated accounting theory and concepts with an emphasis on corporate financial accounting and reporting, with a focus on U.S. GAAP, and exposure to International Financial Reporting Standards (IFRS).

ACC 3033. Intermediate Accounting II. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 3023 and declared accounting major or approval of Department Chair and Dean of the College. A continuation of the in-depth study of promulgated accounting theory and concepts with an emphasis on corporate financial accounting and reporting, with a focus on U.S. GAAP, and exposure to International Financial Reporting Standards (IFRS).

ACC 3043. Federal Income Taxation. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 3023 and declared accounting major or approval of Department Chair and Dean of the College. A conceptual introduction to the U.S. federal income tax system. Concepts include gross income, statutory deductions, property transactions, and computation of tax liabilities.

ACC 3053. Intermediate Accounting for Finance Majors. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 2013 and ACC 2033.

An intermediate accounting course with emphasis on interpretation of general-purpose financial statements and the related disclosure notes as they apply to credit analysis and other aspects of corporate finance. Common and significant accounts/transactions will be analyzed, especially those relating to the financing and equity sections of the financial statements. This course cannot be applied toward an accounting major. This course does not satisfy any of the educational requirements of the Texas State Board of Public Accountancy for qualification to sit for the Uniform Certified Public Accounting Examination.

ACC 3113. Accounting Information Systems. (3-0) 3 Credit Hours.

Prerequisites: ACC 2033 with a grade of "C-" or better, IS 3003, and declared accounting major or approval of Department Chair and Dean of the College. A study of database management systems as they relate to the accounting function. Topics include database design and applications that focus on accounting, including the entity-relationship model, data modeling, object-oriented design, and database management.

ACC 3123. Cost Analysis. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 2033 and declared accounting major or approval of Department Chair and Dean of the College. A study of internal accounting information generation with an emphasis on cost accounting tools to develop, implement, and evaluate strategy; cost accounting methods to determine product cost; and cost management concepts and procedures for making business decisions.

ACC 4013. Principles of Auditing. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in both ACC 3033 and ACC 3113, and declared accounting major or approval of Department Chair and Dean of the College. A study of the topic of auditing oriented toward primarily the financial auditing standpoint. The course focuses on the concepts and procedures of auditing applied to the audit of financial statements in accordance with the standards established by the Auditing Standards Board or the Public Company Accounting Oversight Board. Topics also covered include professional ethics, accounting and review services, and the public accounting profession.

ACC 4103. Business Process Management and Control. (3-0) 3 Credit Hours.

Prerequisites: ACC 3113 with a grade of "C-" or better and IS 3003. A study of business processes that support an organization and how they are controlled. This course contributes to the student's understanding of how key business processes are managed, controlled and integrated in enterprise resource planning systems. SAP will be used to illustrate the concepts discussed in the class. (Same as IS 4103. Credit cannot be earned for both ACC 4103 and IS 4103.)

ACC 4163. Contemporary Issues in Accounting Practice. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in all preceding accounting courses; must be taken during the final semester in the undergraduate program. A study of corporate valuation, financial statement analysis, and other advanced topics in accounting practice.

ACC 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: A 3.0 COB grade point average, MGT 3003, taken semester of graduation, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for the required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ACC 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 COB grade point average, MGT 3003, taken semester of graduation, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for the required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ACC 4933. Internship in Accounting. (0-0) 3 Credit Hours.

Prerequisites: 12 semester credit hours of upper-division accounting courses including ACC 3033, a 3.0 UTSA grade point average, a 3.0 grade point average in upper-division accounting courses, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. Provides students with on-the-job training in public, industry, not-for-profit, or governmental accounting units. ACC 4933 may be completed only once for undergraduate degree credit. Credit cannot be earned for both ACC 4933 and ACC 4963.

ACC 4953. Special Studies in Accounting. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study of accounting topics not normally or not often available as part of the regular course offerings. ACC 4953 may be completed only once for degree credit.

Aerospace Studies (ASC)

Aerospace Studies (ASC) Courses

ASC 1031. The Foundation of the United States Air Force I. (1-2) 1 Credit Hour.

A survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Focuses on mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force opportunities, and an introduction to communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing cadets with followership experiences.

ASC 1041. The Foundation of the United States Air Force II. (1-1) 1 Credit Hour.

A continuation of ASC 1031, students progress in acquiring skills and demonstrating their proficiency. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing cadets with followership experiences.

ASC 2031. The Evolution of United States Air Force Air and Space Power I. (1-1) 1 Credit Hour.

Examines general aspects of air and space power through a historical perspective. Covers a time period from the first balloons and dirigibles to the space-age systems of the Global War on Terror. Historical examples are provided to extrapolate development of AF distinctive capabilities and missions to demonstrate the evolution of today's USAF air and space power. Examines several fundamental truths associated with war in the third dimension. Reviews importance of AF core values with use of operational examples and historical AF leaders. Stresses development of communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing cadets with followership experiences.

ASC 2041. The Evolution of United States Air Force Air and Space Power II. (1-1) 1 Credit Hour.

A continuation of ASC 2031, students progress in acquiring skills and demonstrating their proficiency. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing cadets with followership experiences.

ASC 3013. Air Force Leadership Studies I. (3-2) 3 Credit Hours.

A study of leadership, management fundamentals, professional knowledge, Air Force personnel and evaluation systems, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

ASC 3023. Air Force Leadership Studies II. (3-1) 3 Credit Hours.

A continuation of ASC 3013, students progress in acquiring skills and demonstrating their proficiency. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

ASC 4013. National Security Affairs/Preparation for Active Duty I. (3-1) 3 Credit Hours.

Examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within the structure, continued emphasis is given to refining communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

ASC 4023. National Security Affairs/Preparation for Active Duty II. (3-1) 3 Credit Hours.

Continuation of ASC 4013, students progress in acquiring skills and demonstrating their proficiency. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

African American Studies (AAS)

African American Studies (AAS) Courses

AAS 2013. Introduction to African American Studies. (3-0) 3 Credit Hours.

Offers an interdisciplinary introduction to major topics in African American Studies. Course materials will address basic contours of the black experience in the United States. Topics that may be investigated include historical, autobiographical, political, cultural, sociological, literary, and/or popular responses to and representation of African Americans in the United States. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

AAS 2113. African American Culture, Leadership and Social Issues. (3-0) 3 Credit Hours.

This course examines topics related to twentieth-century African American culture, leadership, and social experiences. The focus of this course includes emphasis on civic engagement, leadership, and/or cultural expression (i.e., music, performance arts, film, visual arts) that informs collective identities, social movements, and/or relevant social issues. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

AAS 3013. African American Cultural Experiences. (3-0) 3 Credit Hours.

This course examines cultural expressions (e.g., art, music, film, literature, cultural identity) in the African American experience. The substantive and disciplinary emphasis can vary from one semester to another.

AAS 3113. African American Studies Research Seminar. (3-0) 3 Credit Hours.

This course is designed to introduce students to basic research methods and methodological issues in African American Studies. The course covers methods of social science research, research conceptualization, and research design. Students will become familiar with various methods of data collection, data analysis, and theoretical concepts that pertain to developing critical thinking, analytical, and writing skills.

AAS 3123. Civil Rights Movement & African American Education. (3-0) 3 Credit Hours.

This course provides an introduction to the period of struggle in American history known as the Civil Rights Movement. The objective is to survey the major historical figures, organizations, locations, strategies and ideas that coalesce to make the history of the movement. The course will analyze the historical trajectory of educational policies with particular emphasis on the Brown v. Board of Education decision in 1954 and its implications over the following 20 years.

AAS 3133. African Americans in Higher Education. (3-0) 3 Credit Hours.

This course explores the history of African Americans in higher education. The course examines especially significant post-secondary issues and topics in the twentieth century, such as access, equity, diversity, student organizations, institutional leadership, and current events.

AAS 4013. Topics in African American Studies. (3-0) 3 Credit Hours.

This course analyzes historical and contemporary issues and phenomena associated with African Americans. It explores different methodological approaches by inquiring about these issues and phenomena, and presents varying arguments and ideological positions concerning these public-affairs matters. May be repeated for credit when topics vary. Two or more topics courses may be taken concurrently.

AAS 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the program director, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. A maximum of 3 semester credit hours may be applied to the minor.

AAS 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the program director, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. A maximum of 3 semester credit hours may be applied to the minor.

AAS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the program director, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. A maximum of 3 semester credit hours may be applied to the minor.

AAS 4933. Internship in African American Studies. (0-0) 3 Credit Hours.

Prerequisite: Consent of internship coordinator. Supervised experience relevant to African American studies within selected community organizations. A maximum of 3 semester credit hours may be applied to the minor.

American Sign Language (ASL)

American Sign Language (ASL) Courses

ASL 1013. American Sign Language: Basic I. (3-0) 3 Credit Hours. (TCCN = SGNL 1301)

A study of American Sign Language, including basic concepts and sign lexicon. Grammatical features, including structure of American Sign Language, will be stressed. Each student will be expected to demonstrate to the instructor basic expressive and receptive ASL skills.

ASL 1023. American Sign Language: Basic II. (3-0) 3 Credit Hours. (TCCN = SGNL 1302)

Prerequisite: ASL 1013 or consent of instructor. Continued study of American Sign Language including sign language colloquialisms used in conversational signing. Expands students' receptive and expressive ASL skills and provides a summary of information currently available dealing with ASL grammatical structure and its sociolinguistic and pragmatic usage.

American Studies (AMS)

American Studies (AMS) Courses

AMS 2043. Approaches to American Culture. (3-0) 3 Credit Hours.

Introduces students to a variety of approaches to the study of American culture. Course materials will focus on key concepts such as race and ethnicity, transnationalism and border studies, and gender and sexuality. Students will be encouraged to integrate community-based resources such as local museums, archives, and research centers into course-required projects. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences.

AMS 3013. Early American Culture. (3-0) 3 Credit Hours.

Examines the influences that shaped American culture to the 20th century. Topics may include the impact of colonialism, the Enlightenment, the frontier, industrialism, ethnicity, race, religious reform, and other factors in the development of a distinctive society.

AMS 3023. Modern American Culture. (3-0) 3 Credit Hours.

Examines major trends in American culture during and after the industrial revolution, with special attention to the consequences of urbanization, suburbanization, industrialization, race relations, popular culture, technology, and secularization.

AMS 3123. Applications of American Studies. (3-0) 3 Credit Hours.

Applications of theories and methods of American Studies to particular areas of U.S. culture. Course addresses concepts of nationalism, citizenship, and nation building, inclusion and exclusion in American society, as well as how American cultural and group identities exist in relation to each other.

AMS 3243. Studies in Transnationalism. (3-0) 3 Credit Hours.

Exploration of borders, boundaries, crossings, and exchange in American Studies, with special reference to questions of national identity, material culture, transnationalism, and the impacts of globalization. May be repeated for credit when topics vary.

AMS 3343. Studies in Race and Ethnicity. (3-0) 3 Credit Hours.

The study of historical, social, cultural, and material influences on race and ethnicity. Course will use texts from literature, sociology, history, and other disciplines. May be repeated for credit when topics vary.

AMS 3443. Studies in Gender and Sexuality. (3-0) 3 Credit Hours.

Examination of topics such as masculine, feminine, gay, lesbian, bisexual, and transgendered definitions of gender and sexuality. Course will use texts from literature, sociology, history, and other disciplines. May be repeated for credit when topics vary.

AMS 4823. Topics in American Culture. (3-0) 3 Credit Hours.

An in-depth study of a selected issue or topic in American Studies. May be repeated for credit when topics vary.

AMS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's AMS advisor, the Department Chair, and Dean of the College of Liberal and Fine Arts. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

AMS 4933. Internship in American Studies. (0-0) 3 Credit Hours.

Prerequisite: Consent of AMS program coordinator. Supervised experience relevant to American Studies within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in American Studies. Must be taken on a credit/no-credit basis. Only 3 semester credit hours can be applied to the major in American Studies.

AMS 4936. Internship in American Studies. (0-0) 6 Credit Hours.

Prerequisite: Consent of AMS program coordinator. Supervised experience relevant to American Studies within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in American Studies. Must be taken on a credit/no-credit basis. Only 3 semester credit hours can be applied to the major in American Studies.

AMS 4973. Advanced Seminar in American Studies. (3-0) 3 Credit Hours.

Prerequisites: AMS 2043, AMS 3123, and one of the following: AMS 3243, AMS 3343, AMS 3443, or consent of instructor. An in-depth study of a central theme, problem, or topic in American Studies. Focuses on research methods and preparation of senior portfolio required for the major degree.

AMS 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for Honors in American Studies during their last two semesters. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Anthropology (ANT)

Anthropology (ANT) Courses

ANT 1013. Introduction to Anthropology. (3-0) 3 Credit Hours. (TCCN = ANTH 2346)

Course content spans the study of human culture, past and present; its origins, development, and contemporary change; and the exploration of human physical and cultural differences using the paradigm of adaptation. This course fulfills all required learning objectives for the Social and Behavioral Sciences component of the core curriculum.

ANT 2033. Introduction to Biological Anthropology. (3-0) 3 Credit Hours. (TCCN = ANTH 2301)

A comprehensive evaluation of human biological diversity and its origins. Topics include anatomy, genetics, primate biology, and the human fossil record. Students will gain critical understanding of key theoretical and methodological issues in this anthropological sub-discipline. This course fulfills all required learning objectives for the Life and Physical Sciences component of the core curriculum. (Formerly titled "Introduction to Physical Anthropology.").

ANT 2043. Introduction to Archaeology. (3-0) 3 Credit Hours. (TCCN = ANTH 2302)

This course presents archaeological approaches to understanding human cultures of the past. Students receive instruction in general anthropological concepts and specific archaeological methods and theories. Particular case studies are presented to illustrate several aspects of archaeological practice, and to show how archaeologists develop their understandings of cultural variation and change. The course fulfills all required learning objectives for the Social and Behavioral Sciences component of the core curriculum.

ANT 2053. Introduction to Cultural Anthropology. (3-0) 3 Credit Hours. (TCCN = ANTH 2351)

This course offers students the opportunity to examine cross-cultural variation in contemporary societies around the world in an anthropological context. It emphasizes ethnographic descriptions to highlight cultural variability in economics, social structures, and ideologies. The course fulfills all required learning objectives for the Social and Behavioral Sciences component of the core curriculum.

ANT 2063. Language, Thought, and Culture. (3-0) 3 Credit Hours.

This course surveys anthropological approaches to the cross-cultural study of language, emphasizing linkages among language, expressive culture, systems of belief and value, and the production of cultural meaning. The effects of social context upon speech are examined as are relations of inequality and power that shape linguistic interaction. Instruction is also given in the fundamentals of descriptive linguistics. The course fulfills all required learning objectives for the Language, Philosophy, and Culture component of the core curriculum.

ANT 3023. Great Discoveries in Archaeology. (3-0) 3 Credit Hours.

This course surveys some of the greatest discoveries made by archaeologists in the last 300 years. Specific archaeological sites and finds illustrate the process of archaeological interpretation, provide insight into past cultures, and help to show how the past influences the present. (Formerly ANT 1103. Credit cannot be earned for both ANT 3023 and ANT 1103.).

ANT 3133. Ritual and Symbol. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. An examination of rituals—highly stereotyped, stylized, and repetitive acts usually taking place in carefully selected locations and marked by use of material items. Students will be offered a cross-cultural examination of ritual activity from various cultural regions. Attention is also given to the theoretical frames that contribute to a holistic understanding of ritual practice.

ANT 3153. Indians of the Great Plains. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. An examination of the fundamental cultural transformation and flourishing of Native American societies of the Great Plains following the introduction of the horse. Attention is also given to the subsequent retrenchment under the imposition of Anglo-American dominance, and the recent emergence of new forms of cultural expression within tribal and urban areas.

ANT 3203. Native North Americans. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Survey of Native North American cultures from ancient times to the present. Emphasis will be placed on cultural responses to colonialism and European/American intrusion as well as contemporary issues confronting native North Americans in the present day.

ANT 3223. Anthropology and the Environment. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Human adaptation to the environment and interaction with it, comparing simple and complex societies in various environmental contexts. (Formerly titled "Cultural Ecology.").

ANT 3233. Frauds, Myths, and Mysteries. (3-0) 3 Credit Hours.

This course will critically examine pseudoscience, cult archaeology, and creationism from a scientific perspective. The careful assessment of particular case studies will demonstrate how a strong adherence to professional archaeological methods can uncover facts about the past that are as interesting as myth.

ANT 3253. The Archeology of South America. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2043 recommended. The origins and development of the native cultures of South America, and their relationships to the cultural areas of Central America and the Caribbean. Emphasis on the variety of cultural forms and cultural evolution. The roles of demography, subsistence systems, militarism, religion, and other factors in the rise of South American cultures may be discussed.

ANT 3263. Archaeology of North America. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2043 recommended. Survey of prehistoric cultures in North America from earliest times to historic contact. May include discussion of Ice Age mammoth hunters, Eastern mound-building cultures, Southwestern pueblo cultures, and Plains bison hunters. Chronology, sites, settlement and subsistence patterns, and recent research issues may be considered.

ANT 3273. Civilizations of Mexico. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2043 recommended. Examination of the development of the ancient civilizations of Mexico and Central America: Olmec, Teotihuacan, Toltec, Aztec, and Zapotec, among others. Insights will be drawn from archaeological data, art, hieroglyphic writing, ethnohistoric accounts, and Colonial Period documents. (Formerly titled "Ancient Civilizations of Mesoamerica.").

ANT 3293. Analytical Methods in Anthropology. (3-0) 3 Credit Hours.

Prerequisites: Completion of Core Curriculum requirement in mathematics recommended; ANT 2043 or ANT 2053 recommended. Qualitative and quantitative analysis and computer applications as used in anthropological research.

ANT 3303. Nature and Culture in Greater Amazonia. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. This course examines the historical and contemporary situations of the indigenous peoples of lowland South America, focusing specifically on the Amazon Basin. Consideration will be given to classical ethnographic monographs as well as accounts of the political and ecological challenges that currently face the inhabitants of Greater Amazonia.

ANT 3333. Human Adaptability. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2033 recommended. Examines the biological variability of living populations; includes genetics, anatomy, demography, and change within a physical anthropology framework. (Formerly titled "Physical Anthropology of Human Populations.").

ANT 3343. The Contemporary Pacific. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. This course examines the geography, prehistory, colonial contact and contemporary society in the Pacific Islands. Drawing on case studies from Hawaii to Papua New Guinea, emphasis is placed on ethnography and the contribution of the area to anthropological thought.

ANT 3363. Indians of Mesoamerica. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Survey of the indigenous peoples of Mexico and Central America, including Maya, Zapotec, Mixtec, and Nahua (Aztec) cultures, from before the Spanish conquest to the present. The course emphasizes interactions between native peoples and the Spanish colonial and modern national regimes and processes of culture change.

ANT 3383. Folklore and Folklife. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Examines vernacular arts, crafts, and customs and their function in the maintenance of group identity. National, regional, ethnic, and occupational traditions are investigated. Attention is given to texts such as legends, myths, and ballads, as well as folk performance, clothing, architecture, and foodways.

ANT 3403. Field Course in Archaeology. (0-0) 3 Credit Hours.

Prerequisites: Upper-division standing, consent of instructor, and at least one previous anthropology or archaeology course. Offers the opportunity to gain intensive training in archaeological field methods: excavation, site survey, mapping, sampling, and interpretation. Additional fees are required. May be repeated for credit with advisor's permission, but not more than 6 semester credit hours may be applied to a major in anthropology.

ANT 3406. Field Course in Archaeology. (0-0) 6 Credit Hours.

Prerequisites: Upper-division standing, consent of instructor, and at least one previous anthropology or archaeology course. Offers the opportunity to gain intensive training in archaeological field methods: excavation, site survey, mapping, sampling, and interpretation. Additional fees are required. May be repeated for credit with advisor's permission, but not more than 6 semester credit hours may be applied to a major in anthropology.

ANT 3413. The Ethnographic Experience. (3-0) 3 Credit Hours.

Drawing upon the ethnographic experiences of current and historical anthropologists, this course explores field research in cultural anthropology. Ethnographic methods and techniques are discussed, with emphasis on theoretical and ethical considerations. Students may engage in short-term ethnographic projects.

ANT 3503. Human Origins. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2033 recommended. The fossil record of human emergence and comparative studies of human evolution. Evolution of social organization, technology, and language development to the end of the Ice Age.

ANT 3513. The Human Skeleton. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2033 recommended. Students are given the opportunity to develop skills in the study and analysis of human osteological remains. Applications of skeletal analysis in a variety of fields are considered, including physical anthropology and archaeological demography.

ANT 3523. Medical Anthropology. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013, ANT 2033, or ANT 2053 recommended. This course explores primary concepts and research questions in medical anthropology by looking at how humans experience and understand health, illness, and healing. Theoretical and methodological approaches will be considered using case studies, with an emphasis on the potential that medical anthropologists have to improve health and wellbeing.

ANT 3543. Museum Studies in Anthropology. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013, ANT 2043, or ANT 2053 recommended. By studying the nature and functioning of museums, past and present, this course will explore major controversies and debates about the politics of memory and visual display. Particular emphasis will be placed upon the role of anthropologists and archaeologists in museum contexts. Methodologically, the course will provide an overview of techniques used in exhibition planning and design as well as in collections management.

ANT 3603. Sex, Gender, and Culture. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2033 recommended. Examination of the biological and cultural sources of differences between men and women.

ANT 3713. Anthropology of Material Culture. (3-0) 3 Credit Hours.

Prerequisite: ANT 2043 or ANT 2053 recommended. This course surveys the role of material culture in human social systems of the past and present. Archaeological, historical, and ethnographic case studies are used to illustrate how the material world is variously woven into the fabric of culture. (Formerly titled "Material Culture Systems.").

ANT 3723. Ancient Civilizations. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2043 recommended. Cross-cultural exploration of the development of ancient civilizations and their social, economic, and political institutions, using archaeological remains, ancient art, and ancient writing. The course compares ancient civilizations of Mesoamerica, South America, Africa, and Asia. (Formerly titled "Ancient Complex Society.").

ANT 3733. Political and Legal Anthropology. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Comparative political and legal systems; forms of authority, legitimacy, and power. Major trends in anthropological thought are explored with emphasis on the political uses of myth, symbol, and ritual. Law and judicial processes are examined in Western and non-Western societies.

ANT 3743. The Anthropology of Cyber Cultures. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 recommended. This course focuses on the cultural and historical dimensions of cyberspace. Consideration will be given to a variety of topics that may include virtual worlds and gaming, online communities, social networking, the political economy of information as well as cross-cultural theories of identity, location, and space as these apply to cyber cultures.

ANT 3803. Media, Power, and Public Culture. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Film and media images facilitate the production, consumption, and circulation of ideas and practices in the United States and cross-culturally. The course traces the history and meaning of various communication technologies and their impact on culture. It will examine print, film, television, new digital media and the Internet, asking how these are used to create and perpetuate dominant cultural forms as well as how these are appropriated and used by people on the margins as critique and resistance. In an increasingly media-dominated world—mass advertising, indigenous film as political resistance, politics as media campaigns, DVD productions by gangs and terrorist organizations—understanding the relationship between media and culture is a critical dimension of the professional knowledge of our future.

ANT 3823. Applied Anthropology. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Applied anthropology uses anthropological theories and methods to help solve real-world problems. Through case studies, this course will explore how, where and why applied anthropology is conducted in each subfield of the discipline. Course materials and assignments will help students identify and develop anthropological skills and experiences relevant to their career aspirations.

ANT 3833. Indians of Texas. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Ethnological survey of the Indian populations of Texas from the early historic period to the present. (Formerly ANT 4133. Credit cannot be earned for both ANT 3833 and ANT 4133.)

ANT 3843. Introduction to Primate Diversity. (3-0) 3 Credit Hours.

This course offers a broad survey of the social behavior and ecology of the living primates. It begins with a survey of primate taxonomy, drawing distinctions among prosimians, monkeys, and apes. The course concludes with consideration of what the study of nonhuman primates can tell us about human evolution.

ANT 3853. Modern Ape Behavior and Ecology. (3-0) 3 Credit Hours.

Modern apes show considerable diversity in their behavioral and morphological adaptations. This course focuses on the major theoretical approaches to understanding the biological variation within this primate group. The question of whether great apes exhibit culture is also discussed.

ANT 3863. The Evolution of Human Nature. (3-0) 3 Credit Hours.

A central concept in the evolution of human behavior is the idea that our brains, like our bodies, have been shaped by natural selection. The extent to which this factor influences the diverse behavior of modern humans is a topic of considerable debate. This course takes a critical look at different attempts to explain human behavior based on adaptive design.

ANT 3873. Food, Culture, and Society. (3-0) 3 Credit Hours.

This course explores the relationship between food and culture in diverse societies by examining food, food practices, and production, as well as the meanings associated with food. Topics include issues of identity, class, food habits, global food systems, and world hunger.

ANT 3883. Death and Dying. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013, ANT 2043, or ANT 2053 recommended. Cross-cultural approaches to death, dying, and bereavement with a focus on either contemporary or prehistoric cultures depending on instructor's emphasis. When exploring contemporary cultures, attention will be given to the emotional, social and ethical issues of dying, and the social organization of death and dying. When exploring prehistoric groups, attention will be given to conceptualizing death through diverse funerary practices, body treatment of the deceased, and religious principles involved with death. In both cases, the course seeks to provide a comparative understanding of death and its wider social implications. May be repeated once with advisor's approval when topic varies.

ANT 3893. Primate Ecology. (3-0) 3 Credit Hours.

Nonhuman primates in their natural habitats, including biogeography, feeding and ranging behavior, structure and social organization of groups in relation to environment, and primates as members of communities.

ANT 3903. Introduction to Linguistics. (3-0) 3 Credit Hours.

Basic principles of analysis and description of the structure of language, including sound system, word order, and meaning. Also, overview of selected subfields of linguistics, such as historical linguistics, sociolinguistics, language acquisition, and bilingualism. (Same as ENG 3343 and LNG 3813. Credit cannot be earned for more than one of these courses.)

ANT 4013. Maya Civilization. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2043 recommended. Examination of the development of Maya civilization in Mexico and Central America. Insights will be drawn from archaeological data, art, hieroglyphic writing, ethnohistoric accounts, and Colonial Period documents.

ANT 4023. Histories of Anthropology. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033, ANT 2043, ANT 2053, or ANT 2063 recommended. This course examines the history of anthropology as a distinct field, including considerations of historical figures, institutions and relationships among subfields. Emphasis will be placed on changes in theoretical and methodological orientations as they emerge in specific historical contexts.

ANT 4033. Dogs, Wolves, and Human Evolution. (3-0) 3 Credit Hours.

Archaeological, historical, and genetic data suggest that humans have a closer and longer history with dogs than any other animal species, perhaps as long as 100,000 years. Dogs can even interpret our gestures and facial expressions better than our closest living relative, the chimpanzee. In this class, we explore the underpinnings of this relationship from its earliest origins in the domestication of wolves to our interactions with them today. Topics include human-wolf interactions in North America, Europe and Asia, evolutionary cognition of dogs, human-dog coevolution, and dog and wolf behavior in a larger comparative framework, including chimpanzees and other primates.

ANT 4113. Archaeology of Texas. (3-0) 3 Credit Hours.

Prerequisite: ANT 2043 or ANT 3263 recommended. Detailed review of prehistoric and historic aboriginal cultures of Texas and adjacent areas; current trends in Texas archaeology; examination of artifacts; and field trips to local prehistoric sites.

ANT 4123. Archaeology of the American Southwest. (3-0) 3 Credit Hours.

Prerequisite: ANT 2043 or ANT 3263 recommended. Consideration of the prehistoric cultures in the American Southwest and northern Mexico from the earliest occupations to European contact. Paleo-Indian, Archaic, Mogollon, Anasazi, and Hohokam occupations are reviewed with a consideration of recent research directions and theory.

ANT 4143. Primate Feeding Biology. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033, ANT 3843, or ANT 3893 recommended. An investigation into the ecology and evolution of wild primate feeding biology and nutrition. Topics include primate-plant interactions, nutritional requirements, plant defensive chemistry, foraging theory, sensory ecology, evolution of body size and its implications for feeding, and evolution of primate feeding-related anatomy.

ANT 4183. Diet, Nutrition and the Human Brain. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033, ANT 3843, or ANT 3893 recommended. An investigation into the impact of digestion, food and diet on human brain evolution. Topics include a review of macronutrients and metabolism, brain and gut anatomy and physiology, the interactions between the central nervous system and enteric nervous system, food and cognition, and the roles of hunting, meat consumption, and cooking in human evolutionary history.

ANT 4233. Conservation of Primates in Global Perspective. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033 or ANT 3843 recommended. Analysis of the conservation status of the world's nonhuman primates, and the specific threats to their survival. Includes examination of issues relating to the anthropology of conservation, such as human-nonhuman primate resource competition, anthropogenic habitat alteration related to land use and development, and efforts to achieve community-based conservation.

ANT 4243. Ethnographic Film. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Critique of major ethnographic films, concentrating on field methodology, production values, and the issue of representation.

ANT 4263. Anthropology of Globalization and Development. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Anthropological perspectives on the nature, causes, and consequences of social and cultural change, with an emphasis on how local cultures are shaped by and resist the process of globalization and development. (Formerly titled "Social and Cultural Change.")

ANT 4273. The Anthropology of Oil. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. This course explores the social, cultural, and political-economic significance of oil, the most important industrial commodity of the world. Case studies will be drawn from books, articles, and films that describe the importance of oil at the level of its production, distribution, and consumption in the United States and around the world.

ANT 4283. Culture in Theory and Practice. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033, ANT 2043, ANT 2053, or ANT 2063 recommended. Examines philosophical approaches to culture and their applications within anthropology. Readings will include significant theoretical works from within anthropology and influential texts from related disciplines. Case studies will be used to illustrate these perspectives.

ANT 4333. Ecology and Evolution of Human Diseases. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033 recommended. Ecological, evolutionary, and biocultural aspects of human disease. Topics include the ecology of infectious/parasitic disease pathogens and their human hosts, the evolution of human host-pathogen interactions, the impact of cultural and demographic change in human populations, and the effects of global environmental change on human disease patterns.

ANT 4363. Primate Evolutionary Biology. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033 or consent of Instructor. This course evaluates the evolutionary history of the nonhuman primates. Examination will include information gained from fossil and genetic data as well as from modern phylogenetic methods.

ANT 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ANT 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ANT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ANT 4933. Internship in Anthropology. (0-0) 3 Credit Hours.

Prerequisite: Consent of internship coordinator. Supervised experience relevant to anthropology within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in Anthropology. Must be taken on a credit/no-credit basis.

ANT 4936. Internship in Anthropology. (0-0) 6 Credit Hours.

Prerequisite: Consent of internship coordinator. Supervised experience relevant to anthropology within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in Anthropology. Must be taken on a credit/no-credit basis.

ANT 4953. Special Studies in Anthropology. (3-0) 3 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ANT 4983. Anthropology Honors Research. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for Department Honors during their last two semesters; approval of the Department faculty. Supervised individual research and preparation of a major paper in support of Department Honors. May be repeated once with advisor's approval.

ANT 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for University Honors in Anthropology during their last two semesters; and consent of the Honors College. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Arabic (ARA)

Arabic (ARA) Courses

ARA 1014. Elementary Arabic I. (3-2) 4 Credit Hours. (TCCN = ARAB 1411)

Fundamentals of Arabic offering the opportunity to develop speaking, listening, reading, and writing skills. Introduction to Arabic culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

ARA 1024. Elementary Arabic II. (3-2) 4 Credit Hours. (TCCN = ARAB 1412)

Prerequisite: ARA 1014, an equivalent, or an appropriate placement test score. Fundamentals of Arabic offering the opportunity to further develop speaking, listening, reading, and writing skills. Further exposure to Arabic culture.

ARA 2013. Intermediate Arabic I. (3-1) 3 Credit Hours. (TCCN = ARAB 2311)

Prerequisite: ARA 1024, an equivalent, or an appropriate placement test score. Continued opportunity to develop listening, speaking, reading, and writing skills. Continued exposure to Arabic culture.

ARA 2023. Intermediate Arabic II. (3-1) 3 Credit Hours. (TCCN = ARAB 2312)

Prerequisite: ARA 2013, an equivalent, or an appropriate placement test score. Continued opportunity to develop listening, speaking, reading, and writing skills. Continued exposure to Arabic culture.

Architecture (ARC)

Architecture (ARC) Courses

ARC 1113. Introduction to the Built Environment. (3-0) 3 Credit Hours. (TCCN = ARCH 1311)

Prerequisites: Completion of or concurrent enrollment in ARC 1214 and ARC 1313. An introduction to the design and construction of the built environment. Includes consideration of professional practice, ethics, interior design, landscape architecture, planning, urbanism and construction. May be applied toward the core curriculum requirement in Language, Philosophy and Culture. (Formerly COA 1113. Credit cannot be earned for both ARC 1113 and COA 1113.)

ARC 1133. Construction Material and Concepts. (3-0) 3 Credit Hours.

Introduction to concepts and skills fundamental to structure, construction, building enclosure, sustainability, and interior environments. Analysis and selection of materials, components, and assemblies. Introduction to the historic role of materials in architectural and interior design. (Formerly ARC 2213 and COA 1133. Credit cannot be earned for ARC 1133 and either ARC 2213 or COA 1133.)

ARC 1151. Introduction to Architecture and Design. (1-0) 1 Credit Hour.

A lecture course introducing ideas and concepts associated with architectural and interior design.

ARC 1214. Design I. (1-8) 4 Credit Hours. (TCCN = ARCH 1403)

Introduction to design through a focus on design literacy and the creative conceptualization of issues fundamental to the design of human environments. Emphasis on the realization and experience of architectural ideas in materials. May be applied toward the core curriculum requirement in Creative Arts. (Formerly ARC 1213 and COA 1213. Credit cannot be earned for more than one of the following: ARC 1214, ARC 1213, and COA 1213.)

ARC 1223. Design II. (1-8) 3 Credit Hours.

Prerequisites: ARC 1214 and ARC 1313. Introduction to design as a broadly creative process based on consideration of spatial experience, context, program, building form, representation, and design communication. (Formerly ARC 1226 and COA 1223. Credit cannot be earned for ARC 1223 and either ARC 1226 or COA 1223.)

ARC 1313. Design Visualization. (0-8) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in ARC 1113 and ARC 1214. Introductory exploration of graphic processes and techniques utilized in the design and construction of the built environment for the representation, visualization, analysis, and presentation of the designed environment. Completion of or concurrent enrollment in this course is required in order to take COA 1213. (Formerly COA 1313. Credit cannot be earned for both ARC 1313 and COA 1313.)

ARC 1413. Architecture and Culture. (3-0) 3 Credit Hours. (TCCN = ARCH 1305)

Introduces architecture by exploring its relation to culture and the dynamic interrelationship between humans and the environment. May be applied toward the core curriculum requirement in Language, Philosophy and Culture.

ARC 1513. Great Buildings and Cities of the World. (3-0) 3 Credit Hours. (TCCN = ARCH 1305)

Introducing buildings and places that exemplify timeless architectural concepts and design strategies considered enduring contributions to the cultural heritage of the world. Examples from Africa, Asia, Europe, and the Americas are presented within the context of diverse cultures and express a variety of different aesthetic, political, and religious values. The course draws from diverse sources from high culture and vernacular sources span from antiquity to the present. May be applied toward the core curriculum requirement in Creative Arts.

ARC 2133. Principles of Architectural Structures. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. An introduction to the principles of architectural structures as related to architectural design. Includes consideration of spatial, structural, and aesthetic issues of building structural systems, and introduces structural behavior, forces and responses in structural systems.

ARC 2156. Drawing and Modeling Studio. (0-14) 6 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Architectural design through the agency of model building and drawing. Course content includes the development of design skills for the conceptualization and informed design of buildings.

ARC 2166. Digital Design Studio. (0-14) 6 Credit Hours.

Prerequisites: Enrollment as an ARC or IDE major. Architectural design through the agency of digital design media. Course content includes the development of design skills for the conceptualization and informed design of buildings.

ARC 2233. Principles of Environmental Systems. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Introduction to the design of environmentally responsive buildings and the natural and artificial systems that support them. Includes consideration of topics such as, embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, acoustics, and building services systems.

ARC 2413. History of Architecture I. (3-0) 3 Credit Hours. (TCCN = ARCH 1301)

Introduction to the history of architecture, urbanism, and material culture from prehistory to the 15th century. Explores the varied ways in which architecture reflects and shapes social, religious, and political concerns in the Western and non-Western world.

ARC 2423. History of Architecture II. (3-0) 3 Credit Hours. (TCCN = ARCH 1302)

Introduction to the history of architecture, urbanism, and material culture from the 15th to the 20th century. Explores the varied ways in which architecture reflects and shapes social, religious, and political concerns in the Western and non-Western world.

ARC 2513. Digital Design Media. (2-2) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major or consent of instructor. Introduction to 2-dimensional and 3-dimensional digital design media. Addresses design skills, principles, techniques, procedures, and knowledge of how digital media impacts the design process, profession, and design culture.

ARC 3113. Advanced Design Visualization. (0-6) 3 Credit Hours.

Prerequisite: Enrollment as an Architecture or an Interior Design major or permission of instructor. Advanced exploration of graphic processes and techniques utilized in the design and construction of built environment for the representation, analysis, visualization, and/or presentation of the designed environment. May be repeated for credit when topics vary.

ARC 3203. Housing Planning: Design and Development. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major or consent of instructor. Survey of the evolution of housing design, planning and development that encompasses the design, location, organization, and financing of housing and community development programs and the capital and labor markets that impact such development at the local level.

ARC 3433. Topics in Architecture and Thought. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an Architecture or Interior Design major or consent of instructor. A lecture/seminar course that provides students the opportunity to explore a variety of architectural ideas, concepts, theories, approaches, or topics related to architectural design. May be repeated for credit when topics vary.

ARC 3553. Introduction to Architectural Theory. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major or consent of instructor. A lecture/seminar course introducing theories that inform architectural design.

ARC 3613. History of Modern Architecture. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013 and WRC 1023. Study of the social, aesthetic, theoretical, technical, cultural, and professional forces that form, shape, and communicate modern architecture. Completion of ARC 2413 and ARC 2423 is recommended for Architecture and Interior Design majors.

ARC 4143. Architecture Topics. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A course exploring issues in architecture. May be repeated for credit when topics vary.

ARC 4153. Topics in International Architecture. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. An examination of current international trends and issues in architecture and urbanism. May be repeated for credit when topics vary.

ARC 4156. Building Design Studio. (0-14) 6 Credit Hours.

Prerequisites: ARC 2133, ARC 2156, ARC 2166, and ARC 2233. Architectural design with emphasis on building technology, materials, assemblies, tectonics, structure, environmental systems, and the inter-relationship of building and environment. Course may be repeated for credit. No more than 24 credit hours of ARC 4156 may count towards the degree.

ARC 4183. Environmental Systems. (2-2) 3 Credit Hours.

Prerequisites: ARC 2156, ARC 2166, and ARC 2233. Advanced issues in the design of environmentally responsive buildings and the natural and artificial systems that support them, such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, acoustics, and building services systems. Includes the use of appropriate performance assessment tools.

ARC 4213. Furniture Design and Construction. (0-8) 3 Credit Hours.

Prerequisite: ARC 2156, ARC 2166, or consent of instructor. Focuses on essential elements of furniture design and construction, emphasizing relations to architectural space, human factors, and the use of materials, connections, and finishes.

ARC 4223. Topics in Design Computing. (2-2) 3 Credit Hours.

Prerequisite: ARC 2513 or consent of instructor. Theory-based seminar course exploring critical, spatial and philosophical issues relative to the impact of digital technologies within the field of architecture. Involves some usage of 2-D and 3-D digital media.

ARC 4233. Computer Projects in Design. (2-2) 3 Credit Hours.

Prerequisite: ARC 2513 or consent of instructor. Project-driven lecture/laboratory course exploring advanced issues associated with 3-D modeling, animation, photo-realistic visualization, and computer-aided manufacturing. Considers the role these processes play in architectural and interior design. (Same as IDE 4233. Credit cannot be earned for both ARC 4233 and IDE 4233.)

ARC 4283. Architectural Structures. (2-2) 3 Credit Hours.

Prerequisites: ARC 2133, ARC 2156, and ARC 2166. Advanced study of architectural structures; considers the physical principles that govern classical statics and strength of materials. Graphical and mathematical design of structural systems. Consideration of the role of structural articulation in the design of buildings.

ARC 4333. Practicum/Internship. (0-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. Offers students majoring in architecture or interior design a supervised professional practice experience with public agencies or private firms. Individual conferences and written reports required.

ARC 4816. International Studies Studio. (0-14) 6 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. An architecture or planning studio associated with a study abroad program. (Formerly titled "Study Abroad: Studio.") (Same as IDE 4816. Credit cannot be earned for both ARC 4816 and IDE 4816.)

ARC 4823. International Studies Theory Seminar. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Formerly titled "Study Abroad: History/Theory.") (Same as IDE 4823. Credit cannot be earned for both ARC 4823 and IDE 4823.)

ARC 4833. International Studies Drawing Seminar. (0-6) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A drawing course associated with a study abroad program; involves field trips. (Formerly titled "Study Abroad: Observational Drawing.") (Same as IDE 4833. Credit cannot be earned for both ARC 4833 and IDE 4833.)

ARC 4843. International Studies History Seminar. (0-6) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Same as IDE 4843. Credit cannot be earned for both ARC 4843 and IDE 4843.)

ARC 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

ARC 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

ARC 4916. Independent Study. (0-0) 6 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

ARC 4953. Special Studies in Architecture. (0-6) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or often available as part of the regular course offerings. Special studies may be repeated for credit when the topics vary, but not more than 3 semester credit hours for ARC 4953 or 12 hours for ARC 4956, regardless of discipline, will apply to a bachelor's degree.

ARC 4956. Special Studies in Architecture. (0-14) 6 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or often available as part of the regular course offerings. Special studies may be repeated for credit when the topics vary, but not more than 3 semester credit hours for ARC 4953 or 12 hours for ARC 4956, regardless of discipline, will apply to a bachelor's degree.

Art (ART)

NOTE: Due to the instructional format of studio/laboratory classes, auditors will not be approved for ART courses.

Art (ART) Courses

ART 1003. Two Dimensional Foundations. (0-6) 3 Credit Hours. (TCCN = ARTS 1311)

Prerequisite: Art or Art History majors only. A grade of "C-" or better must be earned in this course to satisfy the prerequisite for subsequent courses in the Art major. Exploration of the visual structure and organization of two-dimensional surfaces using a variety of media, with an emphasis on the development of creative and critical skills. This course may not be applied to Core Curriculum requirements. (Formerly titled "Design: Two Dimensional.").

ART 1013. Three Dimensional Foundations. (0-6) 3 Credit Hours. (TCCN = ARTS 1312)

Prerequisite: Art or Art History majors only. A grade of "C-" or better must be earned in this course to satisfy the prerequisite for subsequent courses in the Art major. Exploration of the visual structure and organization of multidimensional forms in a variety of materials, with an emphasis on the development of creative and critical skills. This course may not be applied to Core Curriculum requirements. (Formerly titled "Design: Three Dimensional.").

ART 1103. Introduction to Visual Arts. (3-0) 3 Credit Hours. (TCCN = ARTS 1301)

A course utilizing images and text designed to offer the general university student an introductory understanding of the broad range of history, interpretations and approaches comprising and applied to the field of visual art. May be applied to the Creative Arts Core Curriculum requirement for non-art majors. This course is designed for non-art majors and cannot be used to fulfill any of the major requirements for the B.A. in Art, the B.A. in Art History and Criticism, or the B.F.A.

ART 1143. Art for Non-Art Majors. (0-6) 3 Credit Hours. (TCCN = ARTS 1325)

An introduction to the history, fundamental principles, materials, and methods of visual art. Individual course sections will be devoted to the study of a specific art discipline such as drawing, painting, photography, or printmaking. May be repeated for credit when topics vary. May be applied to the Creative Arts Core Curriculum requirement for non-art majors. May not be applied to the degree requirements for a major in art.

ART 1213. Drawing I. (0-6) 3 Credit Hours. (TCCN = ARTS 1316)

Prerequisite: This course is restricted to Art and Art History majors. A grade of "C-" or better must be earned in this course to satisfy the prerequisite for subsequent courses in the Art major. Introduction to fundamental principles, materials, and techniques using a variety of drawing media. Emphasizes drawing from observation as a means to develop perceptual and technical skills for visual expression. Includes perspective and other systems of spatial organization. This course may not be applied to Core Curriculum requirements.

ART 1223. Drawing II. (0-6) 3 Credit Hours. (TCCN = ARTS 1317)

Prerequisites: ART 1213; Art or Art History majors only. A grade of "C-" or better must be earned in this course to satisfy the prerequisite for subsequent courses in the Art major. Continued experience with fundamental principles, materials, and techniques emphasizing drawing from observation. Experiences in a variety of media provide opportunities for further development of perceptual and technical skills for visual expression. This course may not be applied to Core Curriculum requirements.

ART 2113. Painting: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2316)

Prerequisites: ART 1003 and ART 1223. Instruction in basic painting concepts, skills, and materials with an emphasis on the use of oil paint and oil mediums.

ART 2223. New Media: Basic. (0-6) 3 Credit Hours.

Prerequisite: ART 1003. This course emphasizes the exploration of new methods and means of art making with contemporary media, and builds upon traditional art processes and concepts. It is an introduction to the essentials of using digital tools, providing an opportunity to learn a broad range of skills and techniques such as the fundamentals of Adobe Photoshop® and Illustrator®, preparation for printing, digital still cameras, scanning, and CD burning. Basic digital concepts covered include the operating system, storage media, directory structure, bitmap vs. vector graphic, and file conversions.

ART 2313. Photography: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2348)

Prerequisite: ART 1003. This introductory level course will offer instruction on camera controls, black & white and color image development in a digital darkroom, in-house printing, file management, documentation of 2-D and 3-D artwork, online publishing, and digital montage primarily through the use of Adobe software. Projects emphasize both aesthetic and conceptual development through the introduction of historic and contemporary photographic genres. Students must have access to a digital SLR camera. Previous computer experience is helpful, but not required. Transfer students who have not had experience with digital darkroom must enroll in this course before proceeding to Photography: Intermediate and Advanced Topics (ART 3513 and ART 4533). (Formerly ART 2513.)

ART 2413. Printmaking: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2333)

Prerequisites: ART 1003 and ART 1223. Introduction to printmaking processes, concepts, and materials.

ART 2613. Sculpture: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2326)

Prerequisite: ART 1013. Instruction in basic sculptural concepts and materials.

ART 2713. Ceramics: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2346)

Prerequisite: ART 1003. Students will be given the opportunity to learn basic ceramic concepts and techniques including wheel throwing, slab building, coil construction, and glazing, to create vessel and sculptural forms. Emphasis is placed on technical execution and the use of the material for personal expression. Students will also participate in team loading, unloading, and firing kilns. Lectures/presentations provide a general introduction to historical and contemporary ceramic artists and influences.

ART 3023. Color Theory and Practice. (0-6) 3 Credit Hours.

Prerequisites: ART 1003, ART 1013, and ART 1223. Exploration of color theories and the practical use of color in its many different aspects including additive, subtractive, and 3-dimensional color; color mixing; interactions of color and light; color symbolism; and creative applications in various art media. Course format consists of lectures, student presentations, and assigned studio projects.

ART 3033. Contemporary Studio: Concepts and Practice. (0-6) 3 Credit Hours.

Prerequisites: Satisfactory completion of 9 semester credit hours of any three 2000-level art courses, and 6 semester credit hours of AHC courses. Interdisciplinary studio projects generated from lectures, readings and discussion, focusing on critical and cultural issues from the 1970s to the present. Projects are intended to encourage collaborative efforts and nontraditional solutions. Required of all B.F.A. degree candidates.

ART 3113. Painting II. (0-6) 3 Credit Hours.

Prerequisites: ART 1003, ART 1223, and ART 2113. Continued study of the methods and materials of painting connecting color, form, and composition to image and idea development. This course emphasizes the use of oil paint and oil mediums. Transfer students who have not had experience with oil paint must enroll in this course before proceeding to Painting III. May be repeated once for credit with instructor permission.

ART 3133. Painting III. (0-6) 3 Credit Hours.

Prerequisite: ART 3113 or consent of instructor. Structured advanced painting projects that present a variety of approaches to painting with an aim to furthering both competence and an individual viewpoint in relation to historical and contemporary issues. Although a variety of media may be used at the instructor's discretion, all students must have had previous experience using oil paint. Transfer students who have not had experience with oil paint must enroll in ART 3113. Sections focusing on a special topic such as abstraction or the figure will occasionally be offered. May be repeated for credit.

ART 3223. Drawing: Figure. (0-6) 3 Credit Hours.

Prerequisite: ART 1223. Study of the human figure and its historical and contemporary implications for the artist, including anatomical and structural dynamics, gesture, narrative, and issues concerning the body as subject. May be repeated for credit.

ART 3233. Drawing: Intermediate. (0-6) 3 Credit Hours.

Prerequisite: ART 1223. Structured drawing projects assigned with an emphasis on the interrelationship of drawing and space. Explores a range of spatial models including observational, abstract, and physical. May be repeated once for credit.

ART 3513. Photography: Intermediate. (0-6) 3 Credit Hours.

Prerequisite: ART 2313. Students will build on technical knowledge through introduction of 35mm and medium film formats as well as black & white techniques and laboratory procedures. Students will further conceptual exploration of photography as a fine art medium through projects that explore historic and contemporary genres. Students must have access to a 35mm analog (film) SLR camera. Transfer students who have not had experience with traditional darkroom must enroll in this course before proceeding to Photography: Advanced Topics. This course cannot be repeated for additional credit.

ART 4033. Studio Art Problems. (0-6) 3 Credit Hours.

Prerequisite: Satisfactory completion of any two 2000-level art courses. An advanced exploration of visual art ideas and practices using various media, materials, and processes. Occasionally may be devoted to a specific topic of study. May be repeated for credit when topics vary.

ART 4133. Painting / Drawing IV. (0-6) 3 Credit Hours.

Prerequisites: ART 3133 or ART 3233 and consent of instructor. Development of an individual direction in painting or drawing (including mixed media, hybrid forms, and experimental approaches) emphasizing the successful synthesis of material, technical, formal and conceptual qualities specific to each student's work. Additional emphasis is given to the understanding and articulation of historical and contemporary issues in the theory and practice of painting and drawing. Other course work, such as reading and/or writing assignments may be required to complement individual studio work. Students repeating ART 4133 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4133. Permission of instructor is required for enrollment in this course. Admission is based on student's demonstrated ability to undertake the development of a focused and proficient body of work with dedicated time in the studio environment. May be repeated for credit.

ART 4233. Drawing: Advanced. (0-6) 3 Credit Hours.

Prerequisites: ART 3233 and consent of instructor. Diverse topics with an emphasis on contemporary drawing practices such as drawing and the body, drawing and duration, and drawing and site. May be repeated for credit. (Formerly titled "Drawing III.").

ART 4313. New Media. (0-6) 3 Credit Hours.

Prerequisite: ART 2223. The focus of this course is on new media as an extension of fine arts practice. Depending on the term topic, there may be instruction in static and/or non-static electronic media, including various forms such as digital print, Web, video, animation, and sound. Students will be encouraged to use digital and other new media tools experimentally to create original electronically generated art that amplifies and extends image making beyond traditional techniques. ART 4313 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times, up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of New Media). Students are expected to enroll in varying sections of ART 4313 in order to expand their knowledge of diverse new media: New Media: Video; New Media: Sound; New Media: Animation; New Media: Web. Students will be required to demonstrate an advanced and expanded performance, which includes execution of artwork, progression in digital media literacy and writing ability, building on their accomplishments in prior sections of ART 4313. This process of developing a refined skill set is time consuming and individualized to each student, as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4313 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to: The exploration of an additional area of digital media not used in prior semesters; The experimentation with, and the refinement of, an additional process(es) not used in prior semesters; Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work; A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester; An increased and more specific understanding of the history of new media especially directed towards the interests and investigations of the student. (Formerly titled "Multimedia Art.").

ART 4433. Printmaking. (0-6) 3 Credit Hours.

Prerequisite: ART 2413. An emphasis on the development of a personal vision and individual approach to the use of the medium, including experimentation in multiple processes. ART 4433 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of printmaking). Students enrolling in ART 4433 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4433. This process of developing a refined skill set is time consuming and individualized to each student as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4433 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to: The exploration of an additional material(s) not used in prior semesters; The experimentation with, and the refinement of, an additional process(es) not used in prior semesters; Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work; A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester; An increased and more specific understanding of the history of printmaking especially directed towards the interests and investigations of the student.

ART 4533. Photography: Advanced Topics. (0-6) 3 Credit Hours.

Prerequisites: ART 2313 and ART 3513. Emphasis on the development of a personal voice through exploration of advanced photographic techniques, concepts as well as self-defined projects. Students will build knowledge and understanding of photography as a fine art medium. Topics may include: Non-Silver and Alternative Processes; Controlled Lighting; Advanced Black and White; Image-Based Performance, Intervention, and Installation; Advanced Color and Digital Darkroom; Primitive Technologies—Pinhole and Toy Cameras. Transfer students who have not had experience with both digital and traditional darkroom must enroll in ART 2313 and ART 3513 before proceeding to Photography: Advanced Topics. While each offered topic may be repeated once for credit, students who chose photography as their emphasis area should take a minimum of four of the offered topics. ART 4533 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of Photography). Students enrolling in ART 4533 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4533. This process of developing a refined skill set is time consuming and individualized to each student as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4533 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to: The exploration of an additional material(s) not used in prior semesters; The experimentation with, and the refinement of, an additional processes(s) not used in prior semesters; Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work; A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester; An increased and more specific understanding of the history of photography especially directed towards the interests and investigations of the student. (Formerly titled "Photography.").

ART 4673. Sculpture. (0-6) 3 Credit Hours.

Prerequisites: ART 1003 and ART 2613. An emphasis on the development of a personal vision and individual approach to the use of the medium. ART 4673 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of Sculpture). Students enrolling in ART 4673 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4673. This process of developing a refined skill set is time consuming and individualized to each student as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4673 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to: The exploration of an additional material(s) not used in prior semesters; The experimentation with, and the refinement of, an additional processes(s) not used in prior semesters; Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work; A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester; An increased and more specific understanding of the history of sculpture especially directed towards the interests and investigations of the student.

ART 4753. Ceramics. (0-6) 3 Credit Hours.

Prerequisites: ART 1003, ART 1013, and ART 2713. An exploration of advanced techniques and processes including large-scale ceramic sculpture, the use of armatures, and clay body and glaze development. Emphasis is placed on technical execution and the use of the material for personal expression. Readings, lectures, and presentations are designed to broaden the students' historical and contemporary reference. ART 4753 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of Ceramics). Students enrolling in ART 4753 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4753. This process of developing a refined skill set is time consuming and individualized to each student, as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4753 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to: The exploration of an additional material(s) not used in prior semesters; The experimentation with, and the refinement of, an additional processes(s) not used in prior semesters; Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work; A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester; An increased and more specific understanding of the history of ceramics especially directed towards the interests and investigations of the student.

ART 4833. Internship in the Visual Arts. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (departmental form available). Students will participate in projects on an individual basis. The practical application of art methods and principles in such projects as providing special art programs or exhibition assistance to organizations and providing technical studio assistance for artists. Students must confer with instructor during the semester prior to enrolling in order to formulate the content of the internship. May be repeated for credit. (Formerly titled "Practicum in the Visual Arts.")

ART 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent studio projects produced under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. This course may be used only under extraordinary conditions when a self-directed student needs special instruction in an area of studio art not offered within normal course offerings.

ART 4953. Special Studies in Art. (0-6) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ART 4983. Senior Seminar and Exhibition. (0-6) 3 Credit Hours.

Prerequisites: ART 3033, and must have completed application for graduation. This course prepares the student in the professional concerns of aesthetics, art practices, and exhibition. The student will prepare work for a group exhibition in consultation with both the class instructor and a faculty advisor from his or her studio area of specialization.

Art History and Criticism (AHC)

Art History and Criticism (AHC) Courses

AHC 1113. Survey of Art and Architecture from Prehistoric Times to 1350. (3-0) 3 Credit Hours. (TCCN = ARTS 1303)

A critical and historical study of art and architecture as it developed from Paleolithic times to 1350 in the various civilizations of Europe, the Near East, and the New World. Course will include selected readings from related fields. May be applied to the Creative Arts Core Curriculum requirements for art and non-art majors.

AHC 1123. Survey of Art and Architecture in Europe and the New World from 1350 to 1750. (3-0) 3 Credit Hours. (TCCN = ARTS 1304)

A critical and historical study of art and architecture as it developed from the Renaissance in Europe and the period of the Aztecs and Incas in the New World to 1750. Course will include selected readings from related fields. May be applied to the Creative Arts Core Curriculum requirement for art and non-art majors.

AHC 1133. Survey of Modern Art. (3-0) 3 Credit Hours.

A critical and historical study of modern art from 1750 to the present. Course will include selected readings from related fields. May be applied to the Creative Arts Core Curriculum requirement for art and non-art majors.

AHC 3113. Contemporary Art. (3-0) 3 Credit Hours.

Prerequisite: 3 semester credit hours of lower-division art history. History, theory, and criticism of the visual arts of the United States and Europe from 1960 to the present. (Formerly AHC 4113. Credit cannot be earned for both AHC 3113 and AHC 4113.)

AHC 3423. Arts of Ancient America. (3-0) 3 Credit Hours.

Prerequisite: 3 semester credit hours of lower-division art history. A critical and historical study of art and architecture in the Western Hemisphere. (Formerly titled "Pre-Columbian Art and Architecture of Mesoamerica.")

AHC 3523. Latin American Art. (3-0) 3 Credit Hours.

Prerequisite: 3 semester credit hours of lower-division art history. A critical and historical study of art from the independence period to the present.

AHC 4333. Topics in Art History and Criticism. (3-0) 3 Credit Hours.

Prerequisite: 3 semester credit hours of lower-division art history passed with a grade of "C-" or better. Focus on a specific period, medium, or theoretical and critical issue within the history and criticism of art. May be repeated for credit when topics vary.

AHC 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion and/or critical writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

AHC 4933. Art Gallery and Museum Internship. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (departmental form available). Supervised experience related to preparation and installation of exhibitions in gallery and museum settings. Students must confer with instructor during the semester prior to enrolling in order to formulate the content of the internship. May be repeated once for credit. Enrollment limited to juniors and seniors with declared major or minor in Art History and Criticism.

Astronomy (AST)

Astronomy (AST) Courses

AST 1013. Introduction to Astronomy. (3-0) 3 Credit Hours. (TCCN = ASTR 1303)

Prerequisite: MAT 1023 or MAT 1073. A descriptive course including the development of astronomy, its methods, and the motions, laws, and evolution of the solar system. Topics include general properties and types of stars, unusual stellar objects such as quasars and black holes, galaxies, evolution, and cosmology. Occasional evening viewing sessions are held. May apply toward the Core Curriculum requirement in Life and Physical Sciences.

AST 1031. Introduction to Astronomy Laboratory. (1-2) 1 Credit Hour. (TCCN = ASTR 1103)

Prerequisite: Completion of or concurrent enrollment in AST 1013, or consent of instructor. This course is an introduction to practical observational techniques, using the school's telescopes as well as student-built classical instruments and exercises in the use of the telescope and certain other astronomical instruments, including simple observations, measurements, and photography. Topics include in-class projects on spectroscopy, stellar positions, solar heating, planetary motions, solar and astrophotography, star clusters, galaxies, and cosmology.

AST 1033. Exploration of the Solar System. (3-0) 3 Credit Hours. (TCCN = ASTR 1304)

Prerequisite: MAT 1023 or MAT 1073. A descriptive course of modern studies of the solar system, including a survey of the properties of the planets and smaller bodies (asteroids and comets) and current theories of the origin of planetary systems. Topics include results from the latest satellite, robotic, and human exploration of space, origin of life in the solar system, existence of other planetary systems, possibilities of space colonization, and the search for extraterrestrial life (techniques and possibilities of communication with other intelligences). May apply toward the Core Curriculum requirement in Life and Physical Sciences.

AST 1043. Current Topics in Astronomy. (3-0) 3 Credit Hours.

Prerequisite: MAT 1023 or MAT 1073. Astronomy receives considerable attention from the media and the public in general. It allows us to ask fundamental questions about who we are, where we come from, and where we will end up as a world. This course will concentrate on the areas of astronomy that are currently most covered by the media—planet detection and interpretation, recent NASA spacecraft missions, supermassive black holes, gamma-ray bursters, dark matter and dark energy in the Universe, and other significant developments that arise during the semester. This course will cover each of these in depth, but will also concentrate on the reaction that the media has had on them. The media and public often have an uncanny ability to probe directly to the main reasons for why scientists study a particular problem. The student who completes this course will be expected to not only have a better scientific understanding of the current hot topics in astronomy, but also understand how the media can actually drive science in general.

AST 1073. Astrobiology: Search for Life in the Universe. (3-0) 3 Credit Hours.

Prerequisite: MAT 1023 or MAT 1073. The concept that life might exist elsewhere besides the Earth has intrigued humankind for centuries. Technology has now enabled this fundamental question to be pursued with substantial international scientific vigor. Within the Solar System, several Mars probes, as well probes to the moons of Jupiter (Europa) and Saturn (Titan), are being developed with specific emphasis on the development of in-situ instrumentation to detect the presence of life. Beyond the Solar System, the search for life signs has gained momentum with the rapid growth in the number of known exoplanets. While the detection of exoplanets is challenging conventional views of planet formation, it has also created opportunities for new observational methods to detect and characterize habitability and bio-signatures. The study of life on Earth has revealed surprising constraints on the limits of life with the discovery of extremophiles capable of surviving in near-freezing, near-boiling, nonaqueous, or high-radiation environments. This interdisciplinary course involves topics in astronomy, planet formation, and biology.

AST 1113. Astronomy for Educators. (3-0) 3 Credit Hours.

Prerequisite: MAT 1023 or MAT 1073. This is a one-semester introductory survey course on modern astronomy, specially designed for education majors. During the semester, students will develop course materials for classroom instruction appropriate for K-12 education. Correcting common misconceptions in astronomy and current teaching strategies will be discussed to help students master the course material and become effective teachers.

AST 3001. Undergraduate Astronomy Seminar. (1-0) 1 Credit Hour.

Prerequisite: Completion of or concurrent enrollment in AST 3003 or consent of instructor. Designed for physics and astronomy majors. Discussions about current astronomical research, with different topics emphasized each semester. May be repeated twice for credit when the topics vary. Offered on a credit/no-credit basis only.

AST 3013. Fundamentals of Astronomy. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963 (or PHY 1923 in previous catalogs) and MAT 1224 (or MAT 1193 and STA 1403) completed with a grade of "C-" or better. This is a one-semester introductory survey course on modern astronomy for science and engineering majors. Students need to be comfortable with solving problems and using math as a tool to help master the course material. Students concerned about their problem-solving and math skills should consider taking AST 1013 instead, which is intended for non-science majors. Among the topics covered are the celestial sphere, basic orbit theory, stellar parameters, binary stars and light curves, and basic introduction to stellar spectral classification. (Formerly AST 2063. Credit cannot be earned for both AST 3093 and AST 2063.)

AST 3023. Introduction to Astrophysics. (3-0) 3 Credit Hours.

Prerequisites: AST 3013 and PHY 2103 or consent of instructor. Topics include an introduction to stellar structure and evolution, stellar atmospheres, collapsed stars, galactic structure, introduction to cosmology, etc. (Formerly AST 3003 and PHY 4003. Credit cannot be earned for more than one of the following: AST 3003, AST 3023 or PHY 4003.)

AST 3033. Observational Techniques in Astronomy. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in AST 3023 or consent of instructor. Properties of stars and starlight; principles of radiation; interpretation of stellar spectra. Observational techniques such as photometry, spectroscopy, telescopes and detectors; variable stars; binary stars. In addition to classical visual observations, topics span the electromagnetic spectrum, including radio, infrared, X-ray, and gamma-ray measurements in astronomy.

AST 3043. Astrochemistry. (3-0) 3 Credit Hours.

Prerequisite: AST 3023 or consent of instructor. An interdisciplinary course that explores astrochemistry: the study of molecules in space. Where are they? How did they get there? What roles do they play in controlling or influencing astrophysical processes? The chemistry of interstellar molecules is one of modern astronomy's best tools for probing the processes of star and planet formation. Organic molecules formed in space and delivered to Earth's primordial surface may have contributed to the origin of terrestrial life. Through a combination of observational spectroscopy and imaging, theoretical modeling and controlled laboratory studies, the secrets of the cosmic chemical cauldron are beginning to be unlocked. This course involves readings in astronomy, chemistry, and biology.

AST 3103. Observational Astronomy Laboratory. (0-6) 3 Credit Hours.

Prerequisite: Completion of, with a grade of "C-" or better, or concurrent enrollment in AST 3033 or consent of instructor. An introduction to practical observational techniques in astronomy designed for physical science students. Topics include basic observational techniques and modern instrumentation in astronomy including astrophotography, photometry, and spectroscopy of solar system, stellar and deep-space objects. Under the supervision of the course instructor, the students will use the 0.4-m telescope and other instrumentation on the campus observatory.

AST 3303. Introduction to Galactic and Extragalactic Astronomy. (3-0) 3 Credit Hours.

Prerequisite: AST 3023 or consent of instructor. Topics include the Milky Way Galaxy and its constituents and the Local Group, morphology and properties of galaxies, Dark Matter, galaxy clusters, structure and evolution of galaxies including interactions and mergers, active galactic nuclei, gravitational lensing, and quasars.

AST 4203. Stellar Astrophysics. (3-0) 3 Credit Hours.

Prerequisite: AST 3023 or consent of instructor. Topics include properties and evolution of stars, stellar atmospheres, stellar spectra, nuclear reactions, stellar models, equations of state, radiative transfer, nucleosynthesis in stars, supernovae, and degenerate stars.

AST 4303. Solar System Astrophysics. (3-0) 3 Credit Hours.

Prerequisite: AST 3023 or consent of instructor. Modern studies of the solar system, including properties of the planets and smaller bodies, and the origin of planetary systems. Topics include the solar system, its formation, structure, and evolution; orbital dynamics, surfaces, interiors, atmospheres, magnetospheres, and other properties of the sun, the planets and their satellites; comets and asteroids; origin of planetary systems; extra-solar systems. (Formerly titled "The Solar System.")

AST 4953. Special Studies in Astronomy. (3-0) 3 Credit Hours.

Prerequisites: AST 3023 and consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Bicultural Bilingual Studies (BBL)

Bicultural Bilingual Studies (BBL) Courses

BBL 2003. Language, Culture, and Society. (3-0) 3 Credit Hours. (TCN = ANTH 2351)

The interdisciplinary study of language in its cultural and social contexts, with emphasis on linguistically diverse communities. Topics include language and ethnicity, language and gender, language and social class, language acquisition, oral and written language, and language variation and change. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences.

BBL 2023. Latino Cultural Expressions. (3-0) 3 Credit Hours.

An introductory overview of Hispanic visual, performing, and folk arts from their origins in the Iberian peninsula, through the later blending of cultures and their parallelism during revolutionary periods, to contemporary Latino expressions in the United States. (Same as MAS 2023. Credit cannot be earned for both BBL 2023 and MAS 2023.)

BBL 2033. Multiculturalism in the Southwest. (3-0) 3 Credit Hours.

A panoramic study of the concept of culture and the social dynamics of exchange among those ethnic groups that determine the multicultural milieu of the Southwest. Examination of cultural differences and similarities among all peoples of the region and the role of multiculturalism in politics, education, economics, religion, and everyday life. (Same as MAS 2033. Credit cannot be earned for both BBL 2033 and MAS 2033.)

BBL 2243. Globalizing the Local: Bilingual Families, Communities, and Schools. (3-0) 3 Credit Hours. (TCCN = ANTH 2351)

This course examines the interrelatedness among families, communities, and schools in supporting the achievement of Latina/o bilingual children. Taking a local approach to a global phenomenon—preparing bilingual/multilingual children in an increasingly interconnected world, this course explores how historical, political, and social factors influence access to a quality education. Issues pertaining to cultural transmission and maintenance of transnational ties will also be addressed. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences.

BBL 3013. Language Analysis and Bilingualism. (3-0) 3 Credit Hours.

Survey of concepts in descriptive and contrastive linguistics; analysis of language contact phenomena, including cross-linguistic transfer, language alternation, and bilingualism. Offered in Spanish and English.

BBL 3023. Mexican American Culture. (3-0) 3 Credit Hours.

A survey of Mexican American cultural distinctiveness in the areas of biculturalism, cultural production, and social organization. Topics may include family and kinship, folklore, health, language, music, and religion.

BBL 3033. Mexican Americans in the Southwest. (3-0) 3 Credit Hours.

Historical foundations of the United States–Mexico biculturalism in the Southwest. An examination of the historical forces that created and shaped the Mexican American people as a bicultural community. Attention is given to Mexican American contributions in arts, economics, literature, and politics. (Same as MAS 3033. Credit cannot be earned for both BBL 3033 and MAS 3033.)

BBL 3043. Social Psychological Considerations in Mexican American Communities. (3-0) 3 Credit Hours.

A cross-cultural and social psychological study of human development, interethnic communication, stereotyping, learning styles, or other topics relevant to the bicultural setting. (Same as MAS 3043. Credit cannot be earned for both BBL 3043 and MAS 3043.)

BBL 3053. Foundations of Bilingual Studies. (3-0) 3 Credit Hours.

Investigation of the philosophies and theories of schooling in bilingual societies, with focus on language policy and the sociological, psychological, and legal aspects involved. A minimum of six hours of field experience is required. (Formerly BBL 4023. Credit cannot be earned for both BBL 3053 and BBL 4023.)

BBL 3133. Language Development in Bilinguals. (3-0) 3 Credit Hours.

A study of bilingual language development in its social and cultural contexts. Emphasis on factors affecting successful bilingual language development in schools and communities.

BBL 3143. Children's Literature for Bilingual Learners. (3-0) 3 Credit Hours.

Designed to familiarize students with oral and written children's literature in bilingual programs. Focus is on bilingual students' affective, linguistic, and literacy needs through appropriate instruction with authentic literature. Emphasis on Mexican American cultural experiences as well as universal themes. Taught in Spanish and English. Field experience required.

BBL 3403. Cultural and Linguistic Diversity in a Pluralistic Society. (3-0) 3 Credit Hours.

Examination of sociolinguistic and sociocultural principles central to culturally diverse settings, including the classroom. Topics include educational equity, segregated schooling, the achievement gap, hegemony, and social dominance theory. Various pedagogical practices will be explored to identify culturally inclusive responses. Fifteen hours of field experience are required. Field experience required.

BBL 4003. Spanish for Bilingual Instructional Delivery. (3-0) 3 Credit Hours.

Designed to improve the Spanish proficiencies of bilingual classroom teachers. Study of the grammar, writing conventions, and vocabulary for effective communication and instructional delivery in a formal bilingual classroom setting. Taught in Spanish.

BBL 4013. Advanced Spanish for Bilingual Teaching and Learning. (3-0) 3 Credit Hours.

Prerequisite: BBL 4003 or departmental permission. Advanced study of formal academic Spanish for future bilingual educators. Extensive practice in reading and creating authentic didactic materials, instructional delivery, and effective communication with Spanish-speaking parents and community members. Taught in Spanish.

BBL 4033. Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms. (3-0) 3 Credit Hours.

Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, RDG 3823, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence. Must be taken concurrently with BBL 4063, BBL 4073, and BBL 4403 for Bilingual Generalist EC–6 Teacher Certification majors. Must be taken concurrently with BBL 4063 and BBL 4073 for Bilingual Generalist 4–8 Teacher Certification majors. A survey of learning and motivation theory and examination of evaluation and assessment procedures in bicultural-bilingual settings, including formal and informal assessment of language proficiency and learning for instructional purposes. The appropriate use of standardized tests with language minority populations will be included. Field experience is required. Taught in Spanish and English.

BBL 4063. Bilingual Approaches to Content-Based Learning. (3-0) 3 Credit Hours.

Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, RDG 3823, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence. Must be taken concurrently with BBL 4033, BBL 4073, and BBL 4403 for Bilingual Generalist EC–6 Teacher Certification majors. Must be taken concurrently with BBL 4033 and BBL 4073 for Bilingual Generalist 4–8 Teacher Certification majors. An investigation of appropriate first language usage in bilingual classrooms, focusing on the different content areas, appropriate terminology for native language instruction, and the study of languages distribution strategies. Field experience required. Taught in Spanish.

BBL 4073. Language Arts in a Bicultural-Bilingual Program. (3-0) 3 Credit Hours.

Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, RDG 3823, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence. Must be taken concurrently with BBL 4033, BBL 4063, and BBL 4403 for Bilingual Generalist EC–6 Teacher Certification majors. Must be taken concurrently with BBL 4033 and BBL 4063 for Bilingual Generalist 4–8 Teacher Certification majors. An examination of theories, instructional strategies, texts and materials for biliteracy development in the elementary bilingual classroom. Emphasis on the integrated use of listening, speaking, reading, and writing in content area teaching. Field experience required. Taught in Spanish.

BBL 4353. Approaches to Teaching Science EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; BBL 3053, IDS 2403, IDS 2413, IDS 3201, and IDS 3211. A study of pedagogical approaches, materials, and resources designed to support children's meaningful exploration, discovery, and construction of basic concepts and skills in EC–Grade 6. Emphasis in the course will be on the interrelatedness of science in the daily lives of students, unifying concepts and processes common to all sciences, development of effective learning environments for science both inside and outside of the classroom, planning and implementation of inquiry-based science lessons, assessment of student learning, and the use of an integrated approach to teaching. Restricted course; advisor code required for registration. Field experiences required. (Same as C&I 4353. Credit cannot be earned for both BBL 4353 and C&I 4353.).

BBL 4403. Approaches to Teaching Mathematics EC–6. (3-0) 3 Credit Hours.

Prerequisites: Admission to Bilingual Generalist EC–6 Teacher Certification Program; BBL 3053, RDG 3823, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence. Must be taken concurrently with BBL 4033, BBL 4063, and BBL 4073 for Bilingual Generalist EC–6 Teacher Certification majors. This course involves the study of instructional methods and materials that support diverse children's meaningful exploration, discovery, and development of basic concepts and skills in mathematics from EC–Grade 6. Emphasizing a constructivist approach to the teaching and learning of mathematics, this course also advances the use of technology to facilitate mathematics understanding. Attention will be given to understanding the interrelatedness of mathematics and other content areas, creating effective learning environments, planning and implementing lesson plans to meet the differentiated needs of a wide variety of learners, and assessing student learning in mathematics. Restricted course; advisor code required for registration. Field experiences required. (Same as C&I 4403. Credit cannot be earned for both BBL 4403 and C&I 4403.).

BBL 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, and the Department Chair in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

BBL 4953. Special Studies in Bilingual and Bicultural Studies. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. To apply credit earned in BBL 4953 toward a minor, consent of the academic advisor is required.

Biology (BIO)

NOTE: All prerequisites for Biology (BIO) courses must be completed with a grade of "C-" or better.

Biology (BIO) Courses

BIO 1033. Drugs and Society. (3-0) 3 Credit Hours. (TCCN = PHED 1346)

An examination of licit and illicit drugs and their biosocial effects. Topics include pharmacology of alcohol, stimulants, hallucinogens, addiction, and abuse.

BIO 1053. Introductory Microbiology. (3-0) 3 Credit Hours. (TCCN = BIOL 2320)

Prerequisite: BIO 1233 or BIO 1404. A general study of microorganisms, their characteristics, isolation, growth, and importance in nature, industry, public health, and human disease. (Formerly AHS 1053. Credit cannot be earned for both BIO 1053 and AHS 1053. BIO 1053 cannot substitute for BIO 3713.).

BIO 1061. Introductory Microbiology Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 2120)

Prerequisites: BIO 1233 or BIO 1404, and completion of or concurrent enrollment in BIO 1053. Course provides basic microbiology lab skills and procedures, with emphasis on the growth, identification, and control of microbes of concern to health-care professionals. Immunodeficient and pregnant students must contact the Coordinator, Microbiology Teaching Labs, for additional instructions prior to the class start date. (Formerly AHS 1061. Credit cannot be earned for both BIO 1061 and AHS 1061. BIO 1061 cannot substitute for BIO 3722.).

BIO 1233. Contemporary Biology I. (3-0) 3 Credit Hours. (TCCN = BIOL 1308)

This is the first course in a two-part introduction to the science of biology for non-majors. This course focuses on the chemical basis of life, principles of inheritance, principles of evolution and biodiversity. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. May not be applied to a B.S. degree in Biology or B.S. degree in Microbiology and Immunology.

BIO 1243. Contemporary Biology II. (3-0) 3 Credit Hours. (TCCN = BIOL 1309)

This is the second course in a two-part introduction to the science of biology for non-majors. This course focuses on evolution, animal and plant physiology, and ecology. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. May not be applied to a B.S. degree in Biology or the B.S. degree in Microbiology and Immunology.

BIO 1404. Biosciences I. (3-4) 4 Credit Hours. (TCCN = BIOL 1406)

Prerequisite: Completion of or concurrent enrollment in one of the following: STA 1053, MAT 1023, MAT 1033, MAT 1073, or higher. This is the first course in a two-part introduction to the science of biology for students majoring in biology or interested in pre-health professions. Topics include biochemistry, cell biology, genetics and molecular biology. The course includes 3 hours of lecture and a mandatory 3.5-hour laboratory per week. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly BIO 1113 and BIO 1203. Credit cannot be earned for both BIO 1404 and BIO 1113 or BIO 1203.).

BIO 1414. Biosciences II. (3-4) 4 Credit Hours. (TCCN = BIOL 1407)

Prerequisite: BIO 1404. This is the second course in a two-part introduction to the science of biology for students majoring in biology or interested in pre-health professions. Topics include evolutionary biology, biotic diversity, plant structure and function, and ecology. The course includes 3 hours of lecture and a mandatory 3.5-hour laboratory per week. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly BIO 1143, BIO 1223 and BIO 1413. Credit cannot be earned for more than one of the following: BIO 1143, BIO 1223, BIO 1413, BIO 1414, or ES 2013.).

BIO 1511. Biomedical Research as a Career. (1-0) 1 Credit Hour.

Intended for science majors of any discipline, this course is designed to introduce students to career options in the biosciences, particularly biomedical research. Students will explore the opportunities available in research and learn what they can do now to successfully launch a future career as a scientist.

BIO 1882. Introduction to Health Professions. (2-0) 2 Credit Hours.

This course is designed to provide an overview of careers in the health professions. Medical terminology, professional roles and concepts, career opportunities, and specialties within each profession will be discussed. (Formerly AHS 1883. Credit cannot be earned for both BIO 1882 and AHS 1883.).

BIO 2003. Biology of Human Reproduction. (3-0) 3 Credit Hours.

An in-depth look at human reproductive anatomy, physiology, and behavior. Topics to be considered include anatomy, sex differentiation, neuroendocrine physiology, conception and development, birth control, and sexually transmitted diseases. (Formerly BIO 1023. Credit cannot be earned for both BIO 2003 and BIO 1023.).

BIO 2043. Nutrition. (3-0) 3 Credit Hours. (TCCN = BIOL 1322)

Prerequisite: BIO 1233 or BIO 1404. In-depth study of nutrient classes in foods: their ingestion, digestion, absorption and utilization by the human body. Clinical consequences of nutrient deficiency or excess, and Medical Nutrition Therapy to complement management of disease. (Formerly AHS 2043. Credit cannot be earned for both BIO 2043 and AHS 2043.).

BIO 2051. Human Anatomy and Physiology Laboratory I. (0-3) 1 Credit Hour. (TCCN = BIOL 2101)

Prerequisite: BIO 1233 or BIO 1404. Concurrent enrollment in BIO 2053 is recommended. This laboratory supplements the BIO 2053 lecture. It is the first of a two-course laboratory sequence that uses both dissections of representative organisms and laboratory experimentation to study human anatomical systems and physiological processes. (Credit cannot be earned for both BIO 2051 and BIO 2091 or BIO 2111. BIO 2051 cannot substitute for BIO 3422.).

BIO 2053. Human Anatomy and Physiology I. (3-0) 3 Credit Hours. (TCCN = BIOL 2301)

Prerequisite: BIO 1233 or BIO 1404. Concurrent enrollment in BIO 2051 is recommended. This is the first of a two-course sequence that provides an integrative study of the anatomy and physiology of the human body with an emphasis on the structure/function interrelationships between organ systems. Topics covered include cell and tissue biology, the integumentary, skeletal, muscular, and nervous systems. (Credit cannot be earned for both BIO 2053 and BIO 2083 or BIO 2103. BIO 2053 cannot substitute for BIO 3413.).

BIO 2061. Human Anatomy and Physiology Laboratory II. (0-3) 1 Credit Hour. (TCCN = BIOL 2102)

Prerequisite: BIO 2051. Concurrent enrollment in BIO 2063 is recommended. This laboratory supplements the BIO 2063 lecture. It is the second of a two-course laboratory sequence that uses both dissections of representative organisms and laboratory experimentation to study human anatomical systems and physiological processes. (Credit cannot be earned for both BIO 2061 and BIO 2091 or BIO 2111. BIO 2061 cannot substitute for BIO 3422.).

BIO 2063. Human Anatomy and Physiology II. (3-0) 3 Credit Hours. (TCCN = BIOL 2302)

Prerequisite: BIO 2053. Concurrent enrollment in BIO 2061 is recommended. This is the second of a two-course sequence that provides an integrative study of the anatomy and physiology of the human body with an emphasis on the structure/function interrelationships between organ systems. Topics covered include the endocrine, digestive, respiratory, cardiovascular, lymphatic/immune, renal and reproductive systems. Human growth and development will also be covered. (Credit cannot be earned for both BIO 2063 and BIO 2083 or BIO 2103. BIO 2063 cannot substitute for BIO 3413.).

BIO 2083. Human Anatomy. (3-0) 3 Credit Hours. (TCCN = BIOL 2301)

Prerequisites: BIO 1233 or BIO 1404. This course is only for students who have successfully completed BIO 2103 in a catalog previous to 2015-16. Students who have not successfully completed BIO 2103 are required to take BIO 2053/BIO 2051 instead of BIO 2083/BIO 2091 and BIO 2103/BIO 2111. Systemic anatomy of the human organism. Includes cell biology, histology, and gross anatomy of major organ systems. (Formerly AHS 2083. Credit cannot be earned for both BIO 2083 and AHS 2083.).

BIO 2091. Human Anatomy Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 2101)

Prerequisites: BIO 1233 or BIO 1404, and completion of or concurrent enrollment in BIO 2083. This course is only for students who have successfully completed BIO 2103 in a catalog previous to 2015-16. Students who have not successfully completed BIO 2103 are required to take BIO 2053/BIO 2051 instead of BIO 2083/BIO 2091 and BIO 2103/BIO 2111. The study of human anatomical systems using dissection of representative organisms. (Formerly AHS 2091. Credit cannot be earned for both BIO 2091 and AHS 2091.).

BIO 2103. Human Physiology. (3-0) 3 Credit Hours. (TCCN = BIOL 2302)

Prerequisites: BIO 1233 or BIO 1404. This course is only for students who have successfully completed BIO 2083 in a catalog previous to 2015-16. Students who have not successfully completed BIO 2083 are required to take BIO 2053/BIO 2051 instead of BIO 2103/BIO 2111 and BIO 2083/BIO 2091. Human physiological processes will be examined at the chemical, cellular, tissue and organ system levels. (Formerly AHS 2103. Credit cannot be earned for both BIO 2103 and AHS 2103. BIO 2103 cannot substitute for BIO 3413.).

BIO 2111. Human Physiology Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 2102)

Prerequisites: BIO 1233 or BIO 1404, and completion of or concurrent enrollment in BIO 2103. This course is only for students who have successfully completed BIO 2083 in a catalog previous to 2015-16. Students who have not successfully completed BIO 2083 are required to take BIO 2053/BIO 2051 instead of BIO 2103/BIO 2111 and BIO 2083/BIO 2091. Lab based investigations of system physiological processes with emphasis on humans. (Formerly AHS 2111. Credit cannot be earned for both BIO 2111 and AHS 2111. BIO 2111 cannot substitute for BIO 3422.).

BIO 2313. Genetics. (3-0) 3 Credit Hours. (TCCN = BIOL 2316)

Prerequisites: BIO 1414 and completion or concurrent enrollment in one of the following: MAT 1093 (or higher) or STA 1053. Concurrent enrollment in BIO 2322 is recommended. Principles governing transmission of hereditary factors in plants and animals, with emphasis on molecular, biochemical, and population genetics.

BIO 2322. Genetics Laboratory. (1-4) 2 Credit Hours.

Prerequisites: BIO 1414 and completion or concurrent enrollment in BIO 2313, and in one of the following: MAT 1093 (or higher) or STA 1053. A practical introduction to genetic problem solving that focuses on experiments with model organisms using classic, biochemical and molecular biological techniques. This laboratory includes a lecture component.

BIO 3003. Introduction to Marine Ecology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. An introduction to the study of marine ecology with an emphasis on the physio-chemical and biological factors that determine biodiversity and the affect the biology and distribution of marine organisms. Topics covered include functional biology, biodiversity, ecology and conservation of organisms in marine environments.

BIO 3013. Introduction to Clinical Medicine and Pathology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1404. Introduction to concepts of human disease, diagnosis, and underlying pathology. (Formerly titled "Introductory Pathology.").

BIO 3063. Invertebrate Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. A comprehensive study of the invertebrates that aims to 1) examine the biodiversity of invertebrates in their mode of behavior, physiology, genetics and ecology, 2) understand the functional morphology of invertebrate phyla and their evolutionary relationships, and 3 appreciate the importance of invertebrates in ecosystems.

BIO 3123. Comparative Vertebrate Anatomy. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. Concurrent enrollment in BIO 3132 is recommended. A comparative analysis of developmental and adult anatomy of vertebrates (including human). Emphasis is placed on phylogenetic relationships between form, function and evolution. (Formerly BIO 2123. Credit cannot be earned for both BIO 2123 and BIO 3123.).

BIO 3172. Histology and Cytology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: BIO 2313 and completion of or concurrent enrollment in BIO 3163. Microscopic study of tissues and organs. Basic techniques to prepare tissues will be studied.

BIO 3213. Animal Behavior. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414 or consent of instructor. A detailed study of animal behaviors and their biological determinants.

BIO 3263. The Woody Plants. (2-3) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours. A study of the woody plants emphasizing the characteristics of family, genus, and species. Includes identification of the common woody plants. Leaf, stem, and flower morphology, anatomy, and collecting techniques. Lecture, laboratory, and fieldwork will be included as part of the course. (Same as ES 3223. Credit cannot be earned for both BIO 3263 and ES 3223.).

BIO 3273. Biology of Flowering Plants. (2-3) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours. A study of the wildflowers of Texas emphasizing identification of the more common wildflowers, as well as family characteristics, flower anatomy, plant morphology, and plant-collecting techniques will be included. Lecture, laboratory, and fieldwork will be included as part of the course. (Same as ES 3213. Credit cannot be earned for both BIO 3273 and ES 3213.).

BIO 3283. Principles of Ecology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. Concurrent enrollment in BIO 3292 is recommended for biology majors. A study of the interaction of organisms with their environment, with focus on ecological principles, adaptations of organisms, environmental pollution, and principles of conservation. (Credit cannot be earned for both BIO 3283 and ES 3033.).

BIO 3292. Principles of Ecology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: BIO 1414 and completion of or concurrent enrollment in BIO 3283. A field-oriented course emphasizing modern ecological techniques, including examinations of plant and animal populations and measurement of selected chemical and physical parameters. (Credit cannot be earned for both BIO 3292 and ES 3042.).

BIO 3323. Evolution. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. A discussion of theories and possible mechanisms for evolutionary changes at various levels of organization.

BIO 3333. Plants and Society. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. The importance of plants and plant-derived products to human health and wellbeing through the provision of food, pharmaceuticals, and other important natural products. (Formerly BIO 2343. Credit cannot be earned for both BIO 3333 and BIO 2343.).

BIO 3343. Plant Cell Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. A comprehensive study of the molecular structures and functions of plant cells and their integration into the whole plant system. (Formerly titled "Plant Sciences.").

BIO 3413. Advanced Physiology. (3-0) 3 Credit Hours.

Prerequisites: BIO 2313 and MAT 1193. Concurrent enrollment in BIO 3422 is also recommended. This course is designed to develop the skills and competencies needed by students to understand the dynamic physiological processes underlying the maintenance of homeostatic balance in animals. Topics to be covered include endocrine, neural, muscular, cardiopulmonary and renal physiology. (BIO 2103 or BIO 3153 cannot substitute for BIO 3413.).

BIO 3422. Advanced Physiology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: BIO 2313, one of the following: MAT 1093 (or higher) or STA 1053 and completion or concurrent enrollment in BIO 3413. Basic understanding of the physiological processes in living systems employing methods and instruments of biological research. (BIO 2111 cannot substitute for BIO 3422.).

BIO 3433. Neurobiology. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in BIO 3413. Concurrent enrollment in BIO 3442 is recommended. Anatomy and physiology of nervous systems; the mechanisms of neuronal functions.

BIO 3442. Neurobiology Laboratory. (0-6) 2 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in BIO 3433. A laboratory course emphasizing principles presented in BIO 3433.

BIO 3513. Biochemistry. (3-0) 3 Credit Hours.

Prerequisites: CHE 2603 and CHE 2612; BIO 2313 and CHE 3673 are highly recommended. Concurrent enrollment in BIO 3522 is recommended. Introduction to biochemistry: amino acids, protein structure, enzymes, lipids, metabolism, nucleic acid structure, bioenergetics, and carbohydrates. (Credit cannot be earned for both BIO 3513 and CHE 4303.).

BIO 3522. Biochemistry Laboratory. (1-4) 2 Credit Hours.

Prerequisites: CHE 2603 and CHE 2612, and completion of or concurrent enrollment in BIO 3513. Basic biochemical laboratory techniques: Protein assay, centrifugation, protein purification, chromatography, electrophoresis, western blotting, and enzyme kinetics. This laboratory includes a lecture component.

BIO 3533. FAME-Biophysics. (3-0) 3 Credit Hours.

This course is only open to students who are participating in the FAME Program. Biophysics is an algebra-based introduction to the science of physics with an emphasis on the life sciences and the practice of medicine. Topics include mechanics, fluids, sounds, and electromagnetism and their biomedical applications.

BIO 3543. FAME-Behavioral Health. (3-0) 3 Credit Hours.

This course is only open to students who are participating in the FAME Program. This course is designed to introduce students to the challenges and opportunities of treating patients with mental illness. Students will learn key ethical principles, differential diagnosis, and pharmacological and psychotherapeutic interventions for managing serious mental illnesses including schizophrenia, bipolar disorder, depression, and anxiety disorders. Students will also learn how to conduct a psychiatric interview and prepare a new patient intake including patient history, mental status exam, assessment, and plan.

BIO 3553. FAME-Geriatrics. (3-0) 3 Credit Hours.

This course is only open to students who are participating in the FAME Program. Using interdisciplinary perspectives, students will learn about medical and psychosocial aspects of aging including physiological, societal, social, physical, and psychological changes as they relate to the aging process, geriatric health care, palliative care and end of life care. Hands-on educational experiences will involve interaction with healthy elders, clinical rotations at hospital consult services, long term care communities and hospice care. All activities will be case-based, interactive and will have an online learning component.

BIO 3563. FAME-Maternal Health/Pediatrics. (3-0) 3 Credit Hours.

This course is only open to students who are participating in the FAME Program. This course is designed to provide an overview and historical perspective in the evolution of maternal health and pediatrics as fields of practice in medicine. Topics discussed will include public health and policy, representations of the field in the arts, literature and media, and the development of careers in pediatric medicine. Opportunities for interactive community and clinically based experiences will be incorporated in the coursework.

BIO 3573. FAME-Obesity/Nutrition. (3-0) 3 Credit Hours.

This course is only open to students who are participating in the FAME Program. Students will explore the physiological, socio-behavioral, public health and philosophical implications of obesity and nutrition through acute and preventive medicine perspectives.

BIO 3583. FAME-Cardiovascular Disease/Diabetes. (3-0) 3 Credit Hours.

This course is only open to students who are participating in the FAME Program. Students will explore the genetic, biologic, physiologic, cultural, and economic implications of cardiovascular disease through didactic sessions, group projects, self-study and direct patient contact.

BIO 3593. FAME-Cancer. (3-0) 3 Credit Hours.

This course is only open to students who are participating in the FAME Program. Students will explore the historical, genetic, biologic, social, ethical, legal and economic implications of cancer, its predisposing factors and treatments. This will be accomplished through readings, didactic sessions, group projects, self-study, and clinical contact with patients and cancer center health care providers.

BIO 3613. The Biology of Aging. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. The biological principles of human life and health; changes that occur with aging and their implications for the lives of students and their families.

BIO 3623. Neuropsychopharmacology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414; BIO 3433 is recommended. A study of the pharmacology of drugs that affect the function of the central nervous system. Topics include drug-receptor interactions, drugs of abuse, and drugs used to treat mental illness.

BIO 3663. Human Embryology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. Development of the human embryo from fertilization to the birth of the fetus. The origin of various tissues and organs will be followed during development. Environmental and genetic factors that can alter development will be discussed.

BIO 3713. Microbiology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. Concurrent enrollment in BIO 2313 and BIO 3722 is recommended. A comprehensive study of microorganisms, including their composition, morphology, growth, metabolism, classification, ecology, and significance in disease. (BIO 1053 cannot substitute for BIO 3713. Credit cannot be earned for both BIO 3713 and ES 3103.).

BIO 3722. Microbiology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: BIO 1414, and completion of or concurrent enrollment in BIO 3713. Basic microbiology techniques with emphasis on microscopy; cell staining and characterization; species isolation techniques; bacterial cultivation, nutrition, and physical requirements; and the physical and chemical control of microbes. Immunodeficient and pregnant students must contact the Coordinator, Microbiology Teaching Labs, for additional instructions prior to the class start date. (BIO 1061 cannot substitute for BIO 3722. Credit cannot be earned for both BIO 3722 and ES 3112.).

BIO 3743. Bacteriology. (3-0) 3 Credit Hours.

Prerequisite: BIO 3713; BIO 3722 is recommended. A study of the phylogeny of prokaryotes; structure and function of prokaryotic cells; ecology and physiological diversity of prokaryotes; growth and control of microorganisms; genetics of bacteria and bacteriophages; bacteria as agents of disease; antibacterials and other chemotherapeutics; human applications of microbiology, microbial genomics and principles of microbial biotechnology.

BIO 3813. Cell Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313; BIO 3513 is recommended. Concurrent enrollment in BIO 3822 is recommended. A study of cellular molecules and metabolic processes; synthesis and regulation of macromolecules; differential gene expression; membranes and organelles; cytoskeleton; cell cycle and growth of normal and neoplastic cells.

BIO 3822. Cell Biology Laboratory. (1-4) 2 Credit Hours.

Prerequisites: BIO 2313 and either BIO 2322 or CHE 1131, and completion of or concurrent enrollment in BIO 3813. A study of the microscopic, biochemical and molecular approaches used to investigate cellular structure and function, including the principles involved in the techniques, their practical application, and analysis of the data generated. This laboratory includes a lecture component.

BIO 3913. Molecular Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313; BIO 3513 is recommended. A study of nucleotides, DNA, replication, recombination, RNA, transcription, genetic code, translation, genomes, and chromosomes.

BIO 3933. Principles of Cancer Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414; BIO 3813 is recommended. A comprehensive study of the molecular mechanisms responsible for cellular and organismal function including: nucleic acid structure, replication, repair and recombination of DNA, transcription (RNA), RNA processing, translation (proteins), regulation of gene expression, organization of genomes and chromosomes, epigenetics, and related scientific methods and approaches.

BIO 4033. Conservation Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 3283. The class topics will include studying the nature of the biosphere, threats to its integrity, and ecologically sound responses to these threats. Also included will be the origin and preservation of biotic diversity, how the rich variety of plant and animal life around us arose, how it has been maintained by natural processes, and how we can prevent its destruction. (Same as ES 4213. Credit cannot be earned for both BIO 4033 and ES 4213.)

BIO 4053. Wildlife Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 3283. An introduction to wildlife biology and management including ecological principles dealing with ecosystems, natural communities, and populations. The importance of animal behavior, the availability of food, cover, wildlife diseases, predators, hunting, and trapping will be included. Field studies will allow students to observe and apply classroom topics. (Same as ES 4243. Credit cannot be earned for both BIO 4053 and ES 4243.)

BIO 4063. Ornithology. (2-3) 3 Credit Hours.

Prerequisite: BIO 1404. A course covering various aspects of the biology of birds, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips will be included. (Same as ES 3163. Credit cannot be earned for both BIO 4063 and ES 3163.)

BIO 4073. Law, Ethics, and the Life Sciences. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours. Current societal issues which require an understanding of biology (e.g., stem cell research, assisted suicide, abortion, reproductive options, global warming, Intelligent Design, etc.) are considered.

BIO 4143. Developmental Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. Overview of developmental biology focusing on the origins of classical concepts as well as modern molecular approaches. Emphasis will be placed on the mechanisms underlying developmental processes using both invertebrate and vertebrate examples. Subjects include axis formation, induction, morphogenesis, embryonic pattern formation, cell differentiation, and organogenesis. (Formerly BIO 3143. Credit cannot be earned for both BIO 4143 and BIO 3143.)

BIO 4233. Field Biology. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. Concurrent enrollment in BIO 4241 is recommended. A study of the natural history of plants and animals in their native environment. Techniques for the identification of birds, mammals, reptiles, amphibians, insects, and the dominant flowering plants will be discussed. (Same as ES 4113. Credit cannot be earned for both BIO 4233 and ES 4113.)

BIO 4241. Field Biology Laboratory. (0-3) 1 Credit Hour.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. Concurrent enrollment in BIO 4233 is recommended. A field-oriented course offering the opportunity for practical experience observing, collecting, and identifying Texas plants and animals. (Same as ES 4111. Credit cannot be earned for both BIO 4241 and ES 4111.)

BIO 4453. Endocrinology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. Molecular, cellular and physiological effects of hormones in health and disease. Topics include molecular mechanisms of hormone action in reproductive physiology, growth and development as well as defects in hormonal regulation underlying clinically important syndromes (e.g., diabetes, hypertension, osteoporosis and cancer).

BIO 4473. Advanced Clinical Medicine and Pathology. (3-0) 3 Credit Hours.

Prerequisite: BIO 3013. Advanced concepts of human disease, diagnosis, and underlying pathology.

BIO 4483. Medical Mycology. (3-0) 3 Credit Hours.

Prerequisites: BIO 3713 and BIO 3722. Comprehensive study of causative agents, pathogenesis, and treatment of human fungal diseases.

BIO 4583. The Computational Brain. (3-0) 3 Credit Hours.

Prerequisite: BIO 3433. Principles of cellular neurophysiology and neuroanatomy are used to explore the computational operations performed by neurons and networks of neurons.

BIO 4643. Medicinal Plants. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313; BIO 3513 is recommended. Ethnobotanical, biochemical and pharmacological aspects of some of our most important plant-derived drugs.

BIO 4723. Virology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313; BIO 3513 is recommended. Introduction to the molecular, genetic, and biological properties of viruses. Course will cover the basic concepts of virus structure, replication, virus/host interactions, pathogenesis, and evolution.

BIO 4743. Immunology. (3-0) 3 Credit Hours.

Prerequisites: BIO 2313 and BIO 3713. Concurrent enrollment in BIO 4752 is recommended. A study of the properties of antigens and antibodies and current concepts of humoral and cell-mediated immunity and the cells involved.

BIO 4752. Immunology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: BIO 3713 and BIO 3722, and completion or concurrent enrollment in BIO 4743. Laboratory applications of principles presented in BIO 4743. (Formerly BIO 4751. Credit cannot be earned for both BIO 4751 and BIO 4752.)

BIO 4763. Parasitology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. A study of the animal parasites of medical and veterinary importance, with emphasis on their epidemiology, life cycles, pathology, and control.

BIO 4773. Plant-Microbe Interactions. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313 and BIO 3713. The study of molecular and cellular aspects of the interaction between plants and microorganisms in the environment, such as mycorrhizae, pathogenic fungi, *Agrobacterium*, pathogenic bacteria and plant viruses. Topics include microbial virulence, signaling, gene expression, and disease resistance in plants.

BIO 4783. Microbial Genetics and Physiology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313 and BIO 3713. A study of the genetic, physiological and molecular processes that influence gene transfer, pathogenesis, and drug resistance related to bacteria, fungi, and viruses.

BIO 4813. Brain and Behavior. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. Basic physiological functions of the brain and how they relate to behavior.

BIO 4823. Cognitive Neuroscience. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours; BIO 3433 (or PSY 3103) is recommended. The biological foundations of mental phenomena, including perception, attention, learning, memory, language, motor control, and executive function, as well as functional specialization, development and plasticity, through various methodologies.

BIO 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Permission in writing (form available) from the instructor, an undergraduate academic advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree.

BIO 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, an undergraduate academic advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree.

BIO 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, an undergraduate academic advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree.

BIO 4923. Laboratory Research: Biology Concentrations. (0-0) 3 Credit Hours.

Permission in writing (form available in the Biology Department Office) from the faculty mentor, the student's advisor, the Department Chair, and the Dean of the College. Supervised laboratory research mentored by a faculty member engaged in active research within the student's designated area of concentration. May be repeated for credit, but no more than 6 semester credit hours will apply to a bachelor's degree. Only 6 semester credit hours of BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree.

BIO 4951. Special Studies in Biology. (1-0) 1 Credit Hour.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

BIO 4952. Special Studies in Biology. (2-0) 2 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

BIO 4953. Special Studies in Biology. (3-0) 3 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

BIO 4981. Senior Seminar in Microbiology and Immunology. (1-0) 1 Credit Hour.

Prerequisite: Senior status, a minimum of 90 semester credit hours. This course is only open to seniors in the Microbiology and Immunology degree program. Students will learn how to interpret the scientific literature and to organize and present scientific research findings as reported in the current literature. May be repeated for credit. The grade report for the course is either "CR" (satisfactory performance) or "NC" (unsatisfactory performance).

BIO 4993. Honors Research. (0-0) 3 Credit Hours.

Enrollment limited to biology majors who are members of the Honors College or who are pursuing College of Sciences Honors, and who are in their last two semesters of study. Approval by the Honors College or College Honors Committee is required. Supervised research and preparation of an Honors Thesis. May be repeated for credit with approval, but no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree.

Biomedical Engineering (BME)

Biomedical Engineering (BME) Courses

BME 1002. Introduction to Biomedical Engineering. (2-0) 2 Credit Hours.

Prerequisites: A grade of "C-" or better in BIO 1404, CHE 1103, and MAT 1214, and concurrent enrollment in CHE 1113, MAT 1224, PHY 1943, and PHY 1951. This course is an introduction to the interdisciplinary field of biomedical engineering. Topics covered include core biomedical engineering areas such as Biomechanics, Biomaterials and Bioimaging.

BME 2103. Physiology for Biomedical Engineering. (3-1) 3 Credit Hours.

Prerequisites: Major in Biomedical Engineering and a grade of "C-" or better in BME 1002 and CHE 1113. Fundamental principles of general and organs systems physiology, including composition and concentration of cellular and other body fluids, types of transport (e.g., diffusion, membrane transporters), energy (thermodynamics, metabolism), enzymes, feedback control, and membrane potentials with engineering applications and mathematical modeling. This course includes a 3 hour lecture and a 1 hour recitation.

BME 2203. Biomechanics I. (3-1) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in EGR 2323 and PHY 1963, and concurrent enrollment in BME 3114 and BME 3211. Introduction to the fundamental engineering mechanics with focus on the human body. This course includes a 3 hour lecture and a 1 hour recitation.

BME 3003. Biomaterials I. (3-1) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 2103 and EGR 2323 and concurrent enrollment in BME 3114 and BME 3211. Introduction to the fundamental science of natural and synthetic biomaterials used for repairing human tissues and organs. Topics include crystal structures, phase diagrams, and properties of materials. This course includes a 3-hour lecture and a 1-hour recitation. (Formerly BME 2403. Credit cannot be earned for both BME 3003 and BME 2403).

BME 3013. Clinical Internship in Biomedical Engineering. (0-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 2203, BME 3003, and BME 3114. This course will introduce students to the clinical environment, interacting with clinicians on current clinical problems and engineering approaches.

BME 3022. Biomedical Engineering Technology and Product Development. (2-0) 2 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3013. This course will introduce students to current biomedical technologies and product development. (Formerly BME 3023. Credit cannot be earned for both BME 3022 and BME 3023.).

BME 3033. Biomedical Engineering Internship. (0-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3022. Internship with a biomedical industry. May be repeated for credit but no more than 3 semester credit hours will apply to a bachelor's degree.

BME 3041. Biomedical Engineering Research. (0-0) 1 Credit Hour.

Prerequisite: Consent of instructor. Advanced laboratory practice and introduction to biomedical engineering research. This course may be counted as one of the courses to satisfy one of the BME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards a bachelor's degree in Biomedical Engineering.

BME 3042. Biomedical Engineering Research. (0-0) 2 Credit Hours.

Prerequisite: Consent of instructor. Advanced laboratory practice and introduction to biomedical engineering research. This course may be counted as one of the courses to satisfy one of the BME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards a bachelor's degree in Biomedical Engineering.

BME 3043. Biomedical Engineering Research. (0-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Advanced laboratory practice and introduction to biomedical engineering research. This course may be counted as one of the courses to satisfy one of the BME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards a bachelor's degree in Biomedical Engineering.

BME 3114. Cellular Biology for Biomedical Engineering. (3-4) 4 Credit Hours.

Prerequisites: Major in Biomedical Engineering and a grade of "C-" or better in BME 2103 and CHE 1113. Introduction to cell structure and function, energy conversions, protein sorting, signaling, cytoskeleton, cell adhesion, cell cycle, and mammalian genetics. A laboratory component will focus on techniques and procedures commonly used in cell and molecular biology with bioengineering applications. This class includes a 3-hour lecture and a 4-hour laboratory. (Formerly BME 2114. Credit cannot be earned for both BME 3114 and BME 2114).

BME 3203. Biomechanics II: Cardiovascular. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 2203 and BME 3211. Continuation of fundamental biomechanics to include elasticity, viscoelasticity, deformation, stress analysis, blood flow in the systemic and pulmonary circulation, and fluid-structure interaction.

BME 3211. Biomedical Engineering Laboratory I. (0-4) 1 Credit Hour.

Prerequisites: A grade of "C-" or better in EGR 2323, PHY 1963, and STA 1403, and concurrent enrollment in BME 2203 and BME 3003. A biomedical engineering lab in biomechanics and biomaterials. This lab-based course will emphasize on the synthesis and characterization of mechanical properties as well as physical and chemical properties of biomaterials. (Formerly BME 2211. Credit cannot be earned for both BME 3211 and BME 2211).

BME 3303. Bioinstrumentation. (3-1) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 2203, BME 3114, EGR 2323, and PHY 1963, and concurrent enrollment in BME 3311. Fundamental principles of bioinstrumentation used in clinical and research measurements will be covered. Topics include: principles of transducer operation, amplifiers and signal processing, recording and display. This course includes a 3 hour lecture and a 1 hour recitation.

BME 3311. Biomedical Engineering Laboratory II. (0-4) 1 Credit Hour.

Prerequisites: A grade of "C-" or better in BME 3114, BME 3211, and STA 1403, and concurrent enrollment in BME 3303. A biomedical engineering lab in bioinstrumentation. This course will involve the design and testing of hardware and software for acquiring and analyzing biological signals.

BME 3403. Biomaterials II. (1-5) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3003 and BME 3211. This course will emphasize materials used in medical applications, including modifications and characterization techniques. This course includes a 1 hour lecture and a 5 hour laboratory.

BME 3413. Biocompatibility of Materials: Tissue-Biomaterial Interaction. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3003 and BME 3211. This course is an introduction to biocompatibility with special emphasis on the interaction of cells and tissues with biomaterials. Blood composition and blood-material interactions, responses of the inflammatory and immune systems to biomaterials, the process of wound healing, protein structure and interactions with material surfaces, and the mechanisms of cell interactions with extracellular matrix components as well as cell/tissue responses to implant materials are reviewed in detail. Case studies of cardiovascular and orthopaedic implants are discussed to illustrate that selection of biocompatible materials is a key aspect of implant design and a crucial choice for the success of various biomedical applications (e.g., tissue engineering and biotechnology) which require regeneration of tissues.

BME 3503. Nanomaterials and Nanobiotechnology. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3003 and BME 3211. This course will introduce an overview of nanomaterials and nanotechnology development. Topics may include biocompatible nanomaterials, microfabrication, microfluidics, lab-on-a-chip, and applications in biomedical engineering. (Formerly titled "Fundamentals of Nanobiotechnology.")

BME 3703. Biotransport Phenomena. (3-1) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3114, BME 3303, EGR 2323 and PHY 1963, and concurrent enrollment in BME 3711. This course introduces the concepts of quantitative modeling of biological systems with respect to mass, momentum and energy transport. We will study the use of conservation laws to model cardiopulmonary, renal, and thermal systems of the human physiology, and also apply these principles to design artificial and extracorporeal devices, drug delivery systems for pharmacokinetic analysis. This course includes a 3 hour lecture and a 1 hour recitation.

BME 3711. Biomedical Engineering Laboratory III. (0-4) 1 Credit Hour.

Prerequisites: A grade of "C-" or better in BME 3114, BME 3303, and STA 1403, and concurrent enrollment in BME 3703. A biomedical engineering lab in biotransport phenomena. Experiments related to mass, momentum, and energy conservation in biological systems such as measurements of apparent viscosity in microcirculation, oxygen diffusivity and thermal conductivity.

BME 4203. Biomechanics III. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3203. Topics may include elasticity, viscoelasticity, deformation, stress analysis, strain measurement, and stress and strain in organs. Tissues covered may include heart, blood vessels, cartilage, and bone.

BME 4213. Tissue Mechanics. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 2203. Topics may include biomechanics characterization, modeling, and properties of regenerating tissues ranging from bone, cartilage, tendons, ligaments, skin, adipose tissue, nerves, bladder, eye, and pulmonary and cardiovascular tissues.

BME 4293. Topics in Biomechanics. (3-0) 3 Credit Hours.

Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 3203. Specific topics in biomechanics. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

BME 4403. Molecular Techniques for Cell-Biomaterials Interactions. (2-4) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3003. Advanced molecular techniques for characterizing cell-biomaterials interactions will be taught. Current understanding of topics in cell receptors and signaling mechanisms with application for biomaterial design will be emphasized. Topics will include receptor-ligand communication, methods of identification and quantification, and pathways involved for cell to material stress response. This course includes a 2 hour lecture and a 4 hour laboratory.

BME 4423. Tissue Engineering. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3003. This course is an introduction to the current status of, practice, and advances in tissue engineering, the biomedical engineering discipline that applies science and technology to develop replacements for damaged and/or diseased tissues of the body. The course focuses on fundamental aspects of new tissue formation, specifically, cells, biomaterials, biochemical and biophysical stimuli. Applications in bone, cartilage, skin, and vascular tissues are reviewed in detail. Strategies which are used to address current challenges, pursue emerging opportunities and explore new directions are discussed.

BME 4483. Topics in Biomaterials. (3-0) 3 Credit Hours.

Prerequisite: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 3403. Specific topics in biomaterials. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

BME 4493. Topics in Tissue Engineering. (3-0) 3 Credit Hours.

Prerequisite: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 4423. Specific topics in tissue engineering. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

BME 4503. Biosensors. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3503. Basics to biological detection and in-depth view of device design and performance analyses. Topics may include optical, electrochemical, acoustic, piezoelectric, and nanobiosensors.

BME 4603. Biophotonics. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3303. This course will introduce the fundamental principles of biophotonics and will focus on their applications to address critical issues in the frontier of biomedical science and technology. Topics may include fundamentals of light interactions with molecules, cells, and tissues, optical imaging, optical biosensing, flow cytometry, photodynamic therapy, laser tweezers and laser surgery, and nanobiotechnology.

BME 4613. Biomedical Imaging. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 4603. This course will examine, from a systems perspective, the techniques used in a variety of medical imaging modalities, which include x-ray imaging, computed tomography, magnetic resonance imaging, nuclear medicine, ultrasound imaging, and photoacoustic imaging. The fundamental principles and engineering underlying each imaging modality will be discussed and a performance analysis of each system will be examined.

BME 4623. Biomedical Optics. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3303. This course will introduce the fundamental principles of modern and classical optics and their applications for biomedical research. State-of-the-art topics on cutting-edge research in the area of optics and lasers in medicine and biology will be covered.

BME 4703. Biomedical Engineering Thermodynamics. (3-1) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3703 and EGR 2323. This course introduces the basics of engineering thermodynamics and applications in biomedical engineering. The course covers first and second laws, properties of pure substances and mixtures, phase rule, phase and chemical equilibria, and an introduction to statistical thermodynamics. This course includes a 3 hour lecture and a 1 hour recitation.

BME 4713. Cellular Engineering. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3703. This course focuses on using engineering skills and principles in the analysis and design of cellular functions. The emphasis will be on protein biochemistry, cell metabolism, signaling and adhesion.

BME 4793. Topics in Cellular Engineering. (3-0) 3 Credit Hours.

Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 4713. Specific topics in cellular engineering. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

BME 4803. Fundamental Computational Bioengineering. (3-0) 3 Credit Hours.

Prerequisites: Major in Biomedical Engineering and a grade of "C-" or better in BME 3114 and EGR 2323. This course will include fundamental knowledge and skills of mathematical modeling, computer simulation and visualization, with applications in biomedical engineering.

BME 4903. Senior BME Design I. (3-0) 3 Credit Hours.

Prerequisite: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 3022 and STA 1403. Development of project proposals and presentation of conceptual designs. Industrial collaboration and/or faculty sponsorship of these projects is encouraged.

BME 4913. Senior BME Design II. (3-0) 3 Credit Hours.

Prerequisite: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 4903. Continuation of the development of an instructor-approved design project, testing of the design project, and presentation of the findings. Industrial cooperation or faculty sponsorship of projects is encouraged.

Business Law (BLW)

Business Law (BLW) Courses

BLW 3013. Business Law. (3-0) 3 Credit Hours.

Prerequisite: 60 hours of college credit including GBA 2013, or consent of instructor, Department Chair, and Dean of the College. Legal analysis of contemporary environment of business law including the common law, legal reasoning, court systems and procedures, constitutional law, torts, contracts and corresponding areas of Article 2 of the Uniform Commercial Code, agency, property, bailment, international law, and related jurisprudential topics in light of social, ethical, political, economic, and global perspectives. (Credit cannot be earned for both BLW 3013 and BLW 3003.)

BLW 3023. Business Organizations and Commercial Law. (3-0) 3 Credit Hours.

Prerequisite: BLW 3013 or the equivalent. A detailed legal analysis of the Uniform Commercial Code, including sales, commercial paper, bank deposits and collections, electronic transfer funds, letters of credit, secured transactions, and creditors' remedies. This course may also include a discussion of the Bankruptcy Act, the legal analysis of the Uniform Partnership Act, and the Business Corporations Act.

BLW 3523. Real Estate Law. (3-0) 3 Credit Hours.

Prerequisite: BLW 3013 or the equivalent. Legal environment of real property ownership and transfer and legal brokerage; estates in land; sales contracts; mortgage transactions; title conveyances; landlord and tenant; restrictions and zoning; eminent domain; federal, state, and local laws governing housing discrimination; and equal opportunity and community reinvestment. (Same as RFD 3523. Credit cannot be earned for both BLW 3523 and RFD 3523.)

BLW 4153. Tourism Law. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and BLW 3013 or the equivalent. An investigation of the legal aspects of the accommodation, attraction, destination management organization, restaurant, and transportation industries.

BLW 4953. Special Studies in Business Law. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, Department Chair, and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Chemistry (CHE)

NOTE: All prerequisites for Chemistry (CHE) courses must be completed with a grade of "C-" or better.

Laboratory Course Policy: Space in laboratory courses is limited. To ensure the best possible service to all students, failure to attend the first laboratory and lecture sessions associated with a laboratory course may result in administrative removal from the course.

Chemistry (CHE) Courses

CHE 1004. Chemistry for Allied Health Sciences. (3-3) 4 Credit Hours. (TCCN = CHEM 1405)

Introduction to atomic structure, chemical bonding, stoichiometry, states of matter, inorganic chemical reactions, and acids and bases. The course has a laboratory component to introduce general chemical laboratory techniques, principles, and methods to reinforce lecture topics. For majors in occupational therapy, prenursing, and dental hygiene. May not be applied to a major or minor in chemistry, biology, or clinical laboratory sciences. (Formerly CHE 1003 and CHE 1011. Credit cannot be earned for both CHE 1003 and CHE 1004.)

CHE 1014. Elementary Organic and Biochemistry. (3-3) 4 Credit Hours. (TCCN = CHEM 1407)

Prerequisite: A grade of "C-" or better in CHE 1004 (or CHE 1003 in previous catalogs). A survey of the structures and reactions of some important functional groups of organic chemistry, and the relationship of these functional groups to the chemistry of lipids, carbohydrates, nucleic acids, and proteins. May not be applied to a major or minor in chemistry. Laboratory examination of the properties of some simple organic and biological chemicals; topics include solubility, crystallization, organic reactions, titration, enzyme action, sugars, and vitamins which will directly reinforce lecture topics. (Formerly CHE 1013 and CHE 1203. Credit can be earned for only ONE of the following: CHE 1013 or CHE 1014 or CHE 1203.)

CHE 1073. Basic Chemistry. (3-0) 3 Credit Hours.

Prerequisite: Grade of "C-" or better in MAT 1073 or concurrent enrollment. A one-semester preparatory course covering some basic concepts of inorganic chemistry, atomic-molecular structure, and related mathematics. May not be applied to a B.S. or B.A. in Chemistry.

CHE 1103. General Chemistry I. (3-0) 3 Credit Hours. (TCCN = CHEM 1311)

Prerequisites: Passing grade on Chemistry Placement Examination or grade of "C-" or better in CHE 1073, and completion of MAT 1073 with a grade of "C-" or better. Concurrent enrollment in CHE 1121 is recommended. An introduction to descriptive inorganic chemistry and atomic-molecular structure, including such fundamental concepts as the periodic system of elements, valency, chemical bonding, reactions and reaction mechanisms, stoichiometry, equilibria, acids and bases, thermochemistry, molecular-kinetic theory, and states of matter. Credit cannot be earned for both CHE 1103 and CHE 1143.

CHE 1113. General Chemistry II. (3-0) 3 Credit Hours. (TCCN = CHEM 1312)

Prerequisite: A grade of "C-" or better in CHE 1103 or the equivalent. A continuation of CHE 1103. Elementary inorganic and physical chemistry; topics include solutions, electrolytes, oxidation-reduction reactions, reaction trends, coordination chemistry, basic thermodynamics, chemical kinetics, electrochemistry, and nuclear chemistry. Primarily for science majors. Credit cannot be earned for more than one of the following: CHE 1113, CHE 1153, or CHE 1303.

CHE 1120. General Chemistry I Laboratory (lecture component). (0-0) 0 Credit Hours.

Must be taken concurrently with CHE 1121 General Chemistry I Laboratory.

CHE 1121. General Chemistry I Laboratory. (1-4) 1 Credit Hour. (TCCN = CHEM 1111)

Prerequisite: A grade of "C-" or better or concurrent enrollment in CHE 1103 (or CHE 1143). Concurrent registration in CHE 1120 is required. An introduction to chemical problem solving and the basic operations of the chemical laboratory, and a survey of inorganic chemical reactions. This course consists of problem sessions, lecture-demonstrations, and/or laboratory experience. Laboratory to accompany CHE 1103 and CHE 1143. This laboratory includes a lecture component. (Formerly CHE 1122. Credit cannot be earned for both CHE 1121 and CHE 1122.)

CHE 1130. General Chemistry II Laboratory (lecture component). (0-0) 0 Credit Hours.

Must be taken concurrently with CHE 1131 General Chemistry II Laboratory.

CHE 1131. General Chemistry II Laboratory. (1-4) 1 Credit Hour. (TCCN = CHEM 1112)

Prerequisites: A grade of "C-" or better in CHE 1103 and CHE 1121, and a grade of "C-" or better or concurrent enrollment in CHE 1113 (or CHE 1153). Concurrent registration in CHE 1130 is required. Techniques of qualitative and quantitative chemical analysis, illustrated primarily via inorganic chemical systems and their reactions. Laboratory to accompany CHE 1113 and CHE 1153. This laboratory includes a lecture component. (Formerly CHE 1312 and CHE 1132. Credit cannot be earned for more than one of the following: CHE 1131, CHE 1132 or CHE 1312.)

CHE 1143. Principles of Chemistry I. (3-0) 3 Credit Hours.

Prerequisites: A score of 60 percent (%) or higher on the Chemistry Placement Examination, or a grade of "B-" or better in CHE 1073 and a grade of "B-" or better in MAT 1073, or admission through the Honors College. The first of a two-part introduction to the chemical sciences for chemistry majors and other students interested in the chemical sciences. An introduction to chemical reactions and atomic-molecular structure, including chemical formulas and stoichiometry, the periodic system of elements, electrons in atoms, valency, chemical bonding, states of matter, solutions, chemical equilibrium, and acids and bases. (Same as CHE 1103. Credit cannot be earned for both CHE 1103 and CHE 1143.)

CHE 1153. Principles of Chemistry II. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 1143 or a grade of "B-" or better in CHE 1103. A continuation of CHE 1143 for chemistry majors and other students interested in the chemical sciences. Topics include oxidation-reduction reactions, solubility, coordination complexes, thermochemistry and thermodynamics, electrochemistry, chemical kinetics, and nuclear chemistry. (Same as CHE 1113. Credit cannot be earned for both CHE 1113 and CHE 1153.)

CHE 2603. Organic Chemistry I. (3-0) 3 Credit Hours. (TCCN = CHEM 2323)

Prerequisite: A grade of "C-" or better in CHE 1113 (or CHE 1153). An elementary study of structure, stereochemistry, reactions, and reaction mechanisms associated with organic compounds. Primarily for chemistry, premed, and science majors. Discussion and practice of problems amplifying and clarifying the course. (Formerly CHE 2203, CHE 2204, and CHE 2604. Credit cannot be earned for more than one of the following: CHE 2203, CHE 2204, CHE 2603, or CHE 2604.)

CHE 2610. Organic Chemistry I Laboratory (lecture component). (0-0) 0 Credit Hours.

Must be taken concurrently with CHE 2612 Organic Chemistry I Laboratory.

CHE 2612. Organic Chemistry I Laboratory. (1-4) 2 Credit Hours. (TCCN = CHEM 2223)

Prerequisites: A grade of "C-" or better or concurrent enrollment in CHE 1131 and CHE 2603. Concurrent registration in CHE 2610 is required. The first of two semesters of organic chemistry laboratory. Qualitative analysis and determination of the physical constants of organic compounds. Separation, identification, and elementary synthesis of organic compounds. Laboratory techniques—crystallization, distillation, chromatographic and spectroscopic techniques (IR, NMR, MS)—are emphasized. This laboratory includes a lecture component. (Formerly CHE 2242. Credit cannot be earned for both CHE 2612 and CHE 2242.)

CHE 2803. Quantitative Topics for Chemists. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in MAT 1224. This course is intended for students majoring in chemistry and serves as a prerequisite for the introductory courses in physical chemistry. Topics include: power series, linear algebra, determinants, matrices, vector spaces, multi-variable calculus (partial differentiation, multiple integrals), complex variables, ordinary differential equations, numerical analysis, and numerical methods in integration, probability, statistics, regression methods and symbolic programming. (Formerly CHE 2802. Credit cannot be earned for both CHE 2802 and CHE 2803).

CHE 3214. Analytical Chemistry. (2-5) 4 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 1113 (or CHE 1153) and CHE 1131. Topics in quantitative analysis including wet chemical and basic instrumental analysis; gravimetric, volumetric, electrochemical and spectrophotometric determinations combined with error analysis; fundamentals of chemical separations; applications of stoichiometry and chemical equilibria to design efficient analytical protocols. (Formerly CHE 3103 and CHE 3213. Credit cannot be earned for more than one of the following: CHE 3103, CHE 3213, or CHE 3214.).

CHE 3464. Descriptive Inorganic Chemistry. (3-3) 4 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 1113 (or CHE 1153) and CHE 1131; concurrent enrollment in CHE 2603 recommended. The basic principles of inorganic chemistry applied to the properties, reactions, and periodicity of inorganic elements and compounds. Includes the synthesis and characterization of inorganic compounds and the use of specialized laboratory techniques. (Formerly CHE 3264. Credit cannot be earned for both CHE 3464 and CHE 3264.).

CHE 3643. Organic Chemistry II. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 2603. Continuing study of fundamentals of structure, reactions, and reaction mechanisms of phosphorus and sulfur; polyfunctional organic compounds. A continuation of CHE 2603. (Formerly CHE 2303 and CHE 2623. Credit cannot be earned for more than one of the following: CHE 2303, CHE 2623, or CHE 3643.).

CHE 3650. Organic Chemistry II Laboratory (lecture component). (0-0) 0 Credit Hours.

Must be taken concurrently with CHE 3652 Organic Chemistry II Laboratory.

CHE 3652. Organic Chemistry II Laboratory. (1-4) 2 Credit Hours.

Prerequisites: Grades of "C-" or better in CHE 2603 and CHE 2612. Concurrent registration in CHE 3650 is required. Quantitative and continuing qualitative study of organic reactions and molecular structure through functional group interactions and spectroscopic techniques. Simple and multistep syntheses of organic compounds. A continuation of CHE 2612. This laboratory includes a lecture component. (Formerly CHE 2342 and CHE 2632. Credit cannot be earned for more than one of the following: CHE 2342, CHE 2632 or CHE 3652.).

CHE 3673. Organic Chemistry II with Biological Applications. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 2603. Continuing study of fundamentals of structure, mechanism, and reactivity including those in aqueous media and complex biological macromolecules. A continuation of CHE 2603 with emphasis in topics relevant to biology. Chemistry B.S. majors may not substitute this course for CHE 3643. Credit cannot be earned for more than one of the following: CHE 2303, CHE 2623, CHE 3643, or CHE 3673.).

CHE 3804. Physical Chemistry I and Laboratory. (3-3) 4 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 1113 (or CHE 1153), CHE 1131, CHE 2803, PHY 1963 and PHY 1971. The laws of thermodynamics; free energy and chemical potential; ideal and nonideal gases; equilibria; solutions; kinetic theory of gases; kinetics. Laboratory study of selected physicochemical principles and methods to reinforce lecture topics. Data acquisition, data analysis, and report writing are stressed. (Formerly CHE 3204 and CHE 3803/3811. Credit cannot be earned for more than one of the following: CHE 3204, CHE 3803/3811, or CHE 3804.) (Formerly titled "Thermodynamics and Kinetics.").

CHE 3824. Physical Chemistry II and Laboratory. (3-3) 4 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 3804, PHY 1963 and PHY 1971. Introduction to atomic and molecular quantum chemistry; group theory; electronic, rotational, vibrational, and electronic spectroscopies; and statistical mechanics including ensembles and their use in deriving thermodynamic properties using quantum level information. Laboratory study of selected physicochemical principles and methods to reinforce lecture topics. Data acquisition, data analysis, and report writing are stressed. (Formerly CHE 3224 and CHE 3823/3831. Credit cannot be earned for more than one of the following: CHE 3224, CHE 3823/3831, or CHE 3824.) (Formerly titled "Quantum Mechanics, Spectroscopy, and Statistical Mechanics.").

CHE 3854. Basic Biophysical Chemistry. (3-3) 4 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 2603, MAT 1214, PHY 1963 (or PHY 1623), and PHY 1971 (or PHY 1631). The primary goal of basic biophysical chemistry is to help students develop a fundamental understanding of the physical principles that drive biological processes, particularly as applied to proteins. Topics covered include protein structure, molecular thermodynamics, structure simulation, basic statistical mechanics, quantum mechanics and spectroscopy. This course cannot be used as an upper-division chemistry elective by students pursuing a B.S. in Chemistry.

CHE 4213. Instrumental Analysis. (2-5) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 3214 and CHE 3652. Grade of "C-" or better or concurrent enrollment in CHE 3824 (or CHE 3854). The physical and chemical principles of modern instrumental techniques used for chemical analysis. Topics include emission, absorption, magnetic resonance, and FTIR spectroscopies, mass spectrometry, and chromatography. The use of spectrometric and chromatographic instrumentation in the separation, identification, and quantitation of compounds in chemical systems. (Formerly CHE 4103. Credit cannot be earned for both CHE 4213 and CHE 4103.).

CHE 4303. Biochemistry. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 3643. Structure and function relationships of biologically important molecules; energy production, storage and utilization; amino acids, nucleic acids, peptides and proteins; intermediary metabolism; lipids and membranes. (Formerly CHE 4503. Credit cannot be earned from both CHE 4303 and CHE 4503. Credit cannot be earned for both CHE 4303 and BIO 3513. BIO 3513 cannot be taken as a chemistry elective.).

CHE 4463. Inorganic Chemistry. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 3464, and completion of or concurrent enrollment in CHE 3804 or CHE 3854. A study of the structure, bonding, and properties of inorganic compounds; acid-base theory, crystalline state, coordination chemistry, and other advanced topics. (Formerly CHE 4263. Credit cannot be earned for both CHE 4463 and CHE 4263.).

CHE 4473. Bioinorganic Chemistry. (3-0) 3 Credit Hours.

Prerequisites: Grades of "C-" or better in CHE 3464, CHE 3804 (or CHE 3854), and either CHE 4303 or CHE 4463 (or concurrent enrollment in either CHE 4303 or CHE 4463), or consent of instructor. Study of the functions, reaction sites, mechanisms, molecular architecture, and medicinal aspects of metal ions in biological systems, including bio-organometallic compounds. A discussion of the experimental techniques will be included.

CHE 4623. Chemistry of Heterocyclic Compounds. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 3643 or consent of instructor. The chemistry of nitrogen, oxygen, and sulfur heterocycles. Five- and six-membered ring systems with one or more heteroatoms. Applications in the field of synthetic drugs. (Formerly CHE 4403. Credit cannot be earned for both CHE 4623 and CHE 4403.)

CHE 4673. Intermediate Organic Chemistry. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 3643, or consent of instructor. Building on the Organic Chemistry I and II courses, this course focuses on how to draw reasonable "electron-pushing" mechanisms for organic reactions. Acid-base concepts, stereochemistry and conformations, catalysis, and simple molecular orbital theory will be used as needed.

CHE 4853. Computational Chemistry. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 3824 or consent of instructor. The application of molecular mechanical, molecular orbital, and density functional methods to problems of molecular structure, property, reactivity, and spectroscopy.

CHE 4883. Introduction to Mass Spectrometry. (2-3) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 3804 (or CHE 3854), or consent of instructor. The basic principles of interpreting mass spectra and how they are produced. The effect the method of ion production has on the observed mass spectra, and the theory and operation of various types of mass spectrometers will be covered. The basic theory of ion-molecule reactions and principles and practice of biological mass spectrometry and other advanced topics will be presented. (Formerly CHE 4383. Credit cannot be earned for both CHE 4883 and CHE 4383.)

CHE 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which this course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CHE 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which this course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CHE 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which this course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CHE 4923. Special Project in Chemistry. (0-0) 3 Credit Hours.

Prerequisite: Consent of Department Chair (form available in department office). A special laboratory research or library readings project under the direction of a faculty member that results in a report. Limited to science majors in their final year of undergraduate study.

CHE 4953. Special Studies in Chemistry. (3-0) 3 Credit Hours.

Prerequisites: Upper-division standing and consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CHE 4971. Proseminar. (0-3) 1 Credit Hour.

Prerequisite: A grade of "C-" or better in CHE 3643. Oral reports on current publications in chemistry and chemical technology using important chemical reference materials and periodicals. May be repeated for credit, but not more than 2 semester credit hours may be applied toward the degree.

CHE 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee. Supervised research and preparation of an honors thesis. May be repeated only once with approval.

Chinese (CHN)

Chinese (CHN) Courses

CHN 1014. Elementary Chinese I. (3-2) 4 Credit Hours. (TCCN = CHIN 1411)

Fundamentals of Chinese offering the opportunity to develop basic listening, speaking, reading, and writing skills. Introduction of Chinese characters and Chinese culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

CHN 1024. Elementary Chinese II. (3-2) 4 Credit Hours. (TCCN = CHIN 1412)

Prerequisite: CHN 1014, an equivalent, an appropriate placement test score, or consent of instructor. Fundamentals of Chinese offering the opportunity to develop basic speaking, listening, reading, and writing skills. Further study of Chinese characters and Chinese culture.

CHN 2013. Intermediate Chinese I. (3-1) 3 Credit Hours. (TCCN = CHIN 2311)

Prerequisite: CHN 1024, an equivalent, an appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, speaking, reading, and writing skills through structural analysis of the Chinese language. Continued exposure to Chinese culture.

CHN 2023. Intermediate Chinese II. (3-1) 3 Credit Hours. (TCCN = CHIN 2312)

Prerequisite: CHN 2013, an equivalent, an appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, speaking, reading, and writing skills through structural analysis of the Chinese language. Continued exposure to Chinese culture.

Civil Engineering (CE)

Civil Engineering (CE) Courses

CE 1301. Introduction to Civil Engineering. (1-0) 1 Credit Hour.

Prerequisites: Completion of or concurrent enrollment in MAT 1093 and WRC 1013. Engineering as a career, engineering ethics, and approaches to engineering problem formulation and solution using principles of design and decision making.

CE 2103. Civil Engineering Measurements. (2-3) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in MAT 1214 and CE 1301. Principles of measurement and error analysis; application of equipment to acquire, analyze, and control data in civil engineering systems; and introduction to plane surveying.

CE 2633. Environmental Engineering. (3-0) 3 Credit Hours.

Prerequisites: CE 1301 and CHE 1103. Principles, analysis, and design related to environmental monitoring, protection, and remediation systems. Topics include environmental quality and legislation, modeling, water treatment, wastewater treatment, solid and hazardous waste management, air and noise pollution, and radioactive waste management.

CE 3103. Mechanics of Solids. (2-3) 3 Credit Hours.

Prerequisites: EGR 2103 and MAT 1224. Internal forces and deformations in solids; stress, strain, and their relations; stresses and deflections in beams column theory and analysis; and engineering applications.

CE 3113. Structural Analysis. (3-0) 3 Credit Hours.

Prerequisite: CE 3103. Forces and deflections in structural systems; considers stationary and moving loads and exact and approximate methods.

CE 3173. Numerical Methods. (3-0) 3 Credit Hours.

Prerequisite: EGR 2323. Use of computing languages (Matlab and Visualbasic) and numerical methods in solving civil and environmental engineering problems. Techniques for computer solution of linear and nonlinear simultaneous equations; eigenvalues; finite differences; numerical integration; numerical solutions to ordinary differential equations. Case studies in various civil engineering areas.

CE 3213. Reinforced Concrete Design. (2-3) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in CE 3113 and CE 3243. Ultimate strength theory and design for reinforced concrete members.

CE 3233. Steel Design. (2-3) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in CE 3113 and CE 3243. Analysis and design of steel tension members, beams, columns, and bolted or welded connections.

CE 3243. Properties and Behavior of Engineering Materials. (2-3) 3 Credit Hours.

Prerequisites: CE 3103 and STA 2303. Structure, properties, and behavior of engineering materials; measurement and analysis of material properties and behavior. Laboratory exercises illustrate typical material behavior and selected principles of mechanics.

CE 3413. Geotechnical Engineering and Applications. (2-3) 3 Credit Hours.

Prerequisites: CE 3103, and completion of or concurrent enrollment in CE 3173 and GEO 4023. Exploration, sampling, and in-situ measurements; laboratory testing; review of fundamental properties of soil and rock; flow-through porous media; the effective stress principle and computation of in-situ stress distributions; shear strength of soils and one-dimensional consolidation settlement; introduction to slope stability.

CE 3603. Fluid Mechanics. (2-3) 3 Credit Hours.

Prerequisites: EGR 2103 and EGR 2513. Fluid properties, fluid statics concepts, equations of fluid flow in pipes and open channels, and flow-through porous media.

CE 4013. Civil Engineering Systems Analysis. (3-0) 3 Credit Hours.

Prerequisite: EGR 3713. Technical elective course. Systems approach to optimization and problem solving; operations research applications in civil engineering; mathematical modeling and analysis techniques including linear programming, dynamic programming, decision analysis and use of software to solve linear and nonlinear programming problems. (Formerly CE 3713. Credit cannot be earned for both CE 4013 and CE 3713.)

CE 4103. Advanced Steel Design. (3-0) 3 Credit Hours.

Prerequisite: CE 3233. Technical elective course. Connection design, welded and bolted, moment-resistant connections, plate girders, column stability, bracing design, and seismic design of frames.

CE 4123. Highway Engineering. (3-0) 3 Credit Hours.

Prerequisites: CE 2103 and CE 3243. General characteristics of highway design; horizontal and vertical alignment, cross-sections, earthwork, drainage, and pavement; and economic analysis.

CE 4133. Advanced Reinforced Concrete. (3-0) 3 Credit Hours.

Prerequisite: CE 3213. Technical elective course. Torsion design, design of stairs, bending of curved elements, biaxial loads on columns, slenderness effects, joint design, yield line theory, two-way slab systems, strut-and-tie methods, seismic detailing, relationship between research and building code.

CE 4153. Prestressed Concrete. (3-0) 3 Credit Hours.

Prerequisite: CE 3213. Technical elective course. Design of statically determinate and indeterminate structures, estimation of prestress loss, flexure and shear strength, deflections and stress control, composite construction, and continuous span theory.

CE 4253. Introduction to Masonry and Timber Design. (2-3) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in CE 3113 and CE 3243. Technical elective course. Design philosophy and methodology for masonry and timber structures. Flexure design, axial load design, and shear design of basic masonry and timber components. (Formerly CE 3253. Credit cannot be earned for both CE 4253 and CE 3253.)

CE 4293. Geographic Information Systems (GIS). (3-0) 3 Credit Hours.

Prerequisite: CE 2103 or GEO 4023. Technical elective course. Introduces vector, raster and tabular concepts, emphasizing the vector approach. Topics include: spatial relationships, map features, attributes, relational database, layers of data, data ingesting, digitizing from maps, projections, output, applications, and availability of public data sets. Focus will be placed on spatial/temporal data analyses using digitized maps and database information in an area of Civil Engineering specialization.

CE 4303. Hydrometeorology. (3-0) 3 Credit Hours.

Prerequisite: CE 3603. Technical elective course. The main objective of this course is to familiarize the student with topics related to local and global distribution of freshwater. Conceptualizations of the water balance/budget are developed using principles of physical hydrology and meteorology. Emphasis will be on recent research and modern methods for data analysis and modeling. Real-life events and phenomena will be discussed. In addition to the text, material will be presented from other sources. Guest instructors will give presentations on some case studies.

CE 4313. Computer-Aided Design in Civil Engineering. (3-0) 3 Credit Hours.

Prerequisites: EGR 1403, CE 2103, and CE 3603. Organization and programming of civil engineering problems for computer solutions; application of computer-aided design in civil engineering.

CE 4403. Advanced Characterization of Highway Materials. (3-0) 3 Credit Hours.

Prerequisite: CE 3243. Technical elective course. Basic and advanced level of the fundamentals of material response to static and repeated loading; emphasis on the deformation and fatigue behavior of asphalt mixtures, constitutive modeling for mixtures, microstructure characterization for mixtures, nondestructive testing of pavements, asphalt binder characterization, unbound materials (base and sub-base materials) evaluation and characterization.

CE 4453. Transportation Engineering. (3-0) 3 Credit Hours.

Prerequisite: CE 4123. Technical elective course. Study of the Highway Capacity Manual, traffic stream parameters and relationships, analytical techniques in traffic engineering such as capacity analysis, queuing theory, and traffic simulation. Design and operation of advanced traffic management systems including signalization, real-time motorist information, urban incident management, and ITS concepts. (Formerly CE 4233. Credit cannot be earned for both CE 4453 and CE 4233.)

CE 4463. Foundation Engineering. (3-0) 3 Credit Hours.

Prerequisite: CE 3413. Technical elective course. Shallow and deep foundations including: footings, slabs on-grade, cofferdams, sheet-pile walls, drilled shafts, piles and retaining walls. (Formerly CE 4413. Credit cannot be earned for both CE 4463 and CE 4413.)

CE 4543. Project Design and Construction Management. (3-0) 3 Credit Hours.

Prerequisites: CE 3113, EGR 3713, CE 3213 or CE 3233. Civil Engineering design process, project specifications, and construction management. Topics covered include design process/practices, project proposals, pricing, specifications, bidding strategies, project management/scheduling and project financing. The course forms the student teams for CE 4813 Civil Engineering Design and identifies projects. Students are trained on how to write Request for Proposals (RFPs) for the identified projects and how to write engineering consulting proposals in reply to the RFP. Students are also trained on how to present proposals to a panel of senior engineers at the end of the semester. Course must be taken the semester prior to taking CE 4813. (Formerly CE 3543. Credit cannot be earned for both CE 3543 and CE 4543.)

CE 4603. Water Resources Engineering. (3-0) 3 Credit Hours.

Prerequisites: CE 2633 and CE 3603. Corequisite: CE 4633. Analysis and design of surface and subsurface water resource facilities. Design of water supply, wastewater collection, and storm water systems.

CE 4613. Environmental Chemistry. (3-0) 3 Credit Hours.

Prerequisite: CE 4633. Technical elective course. This course explores the chemistry of the environment, the chemistry underlying environmental problems and solutions to environmental problems. Emphasis is placed on thermodynamics and kinetics of reaction cycles; sources, sinks and transport of chemical species; and quantitation of chemical species. Examples are selected from the chemistry of natural and contaminated air, water, and soil. (Same as ES 3153. Credit cannot be earned for both CE 4613 and ES 3153.)

CE 4633. Water and Wastewater Treatment. (2-3) 3 Credit Hours.

Prerequisites: CE 2633 and CE 3603. The application of chemical, biochemical, and physical processes to water treatment, wastewater treatment, and pollution control. (Formerly CE 3633. Credit cannot be earned for both CE 3633 and CE 4633.)

CE 4723. Hydraulic Systems Design. (3-0) 3 Credit Hours.

Prerequisite: CE 3603. Technical elective course. Analysis and design of water resource systems; dam and reservoir design for recharge, flood control, and water supply and demand forecasting, optimization of multi-objective systems, and allocations planning and management.

CE 4733. Applied Hydrology. (3-0) 3 Credit Hours.

Prerequisite: CE 3603. Technical elective course. Hydrologic cycle, precipitation, hydrologic abstractions, surface runoff; unit hydrographs; synthetic hydrographs; peak discharge relationships; flood frequency analysis; flood and reservoir routing; and groundwater hydrology. (Formerly CE 3723. Credit cannot be earned for both CE 4733 and CE 3723.)

CE 4813. Civil Engineering Design. (3-0) 3 Credit Hours.

Prerequisites: CE 3213 or CE 3233, CE 3413, CE 3603 and CE 4543. Opportunity to apply design skills to execution of an open-ended integrated civil engineering design project, including field and laboratory investigations, numerical and scale modeling, design, and formal oral and written presentation of results. Considers safety, reliability, environmental, economic, and other constraints, as well as ethical and social impacts. Students must take the FE (Fundamentals of Engineering) exam during the semester they take this course. Students that pass the FE exam during their last semester of study qualify for a Professional Alumni Award.

CE 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CE 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CE 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CE 4953. Special Studies in Civil Engineering. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Classics (CLA)

Classics (CLA) Courses

CLA 1114. Basic Individualized Instruction. (0-0) 4 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 8 hours of basic individualized instruction will apply to a bachelor's degree.

CLA 2013. Introduction to Ancient Greece. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Introduction to the civilization and cultural achievements of ancient Greece, including history, religion, philosophy, literature, and art. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

CLA 2023. Introduction to Ancient Rome. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Introduction to the civilization and cultural achievements of ancient Rome, including history, religion, philosophy, literature, and art. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

CLA 2033. Introduction to Classical Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Introductory study of selected works of ancient Greek and Roman authors, with emphasis on epic, drama, satire, and lyric. May be applied toward the Core Curriculum requirement in Creative Arts.

CLA 2113. Intermediate Individualized Instruction. (0-0) 3 Credit Hours.

Prerequisites: Successful completion of LAT 1114 or GRK 1114 or equivalent, and permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 hours of intermediate individualized instruction will apply to a bachelor's degree.

CLA 2323. Classical Mythology. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Critical survey of secular and religious classical mythology; attention to the use of myth in ancient literature and the functions of myth in historical, cultural, and cross-cultural contexts. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

CLA 2953. Topics for the Study of the Ancient Mediterranean. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Organized course offering introductory and broad examinations of topics important for the study of the Ancient Mediterranean world that are not covered during typical course offerings. Topics cover social and cultural history, etymology, and the art and archaeology of the Ancient Mediterranean. May be repeated for credit when topics vary.

CLA 3023. Classical Myths and Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical examination of ancient Greek and Roman myths and their functions in literary texts and ancient societies; attention to current theories and methodologies of mythic analysis.

CLA 3053. Topics in Classical Genres. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Consideration of texts selected to illustrate the structural and conceptual properties of a given genre in the classical world, e.g., comedy, epic, or tragedy. May be repeated for credit when topics vary.

CLA 3063. Topics in the Art and Architecture of the Classical World. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. A study of one or more themes, periods, traditions, or archaeological sites in the art and architecture of the ancient Greek and Roman world. May be repeated for credit when topics vary.

CLA 3123. Cultural Issues in Classical Antiquity. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Examination of issues in ancient Greek and Roman power relations and social differences as reflected in classical literature and historical material. Coverage of such topics as slavery, attitudes towards barbarians, gender, and intergenerational strife. May be repeated for credit when topics vary.

CLA 3513. Topics in Classical History. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. An examination of selected events, trends, and transformations in the history of ancient Greece and ancient Rome. May be repeated for credit when topics vary.

CLA 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CLA 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CLA 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CLA 4953. Special Studies in Classics. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies courses may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to a bachelor's degree.

CLA 4973. Senior Seminar in Classics. (3-0) 3 Credit Hours.

Prerequisite: 12 upper-division credit hours in Classics or approved upper-division courses in other disciplines. Undergraduate capstone experience for students in the Classics emphasis and minor, open to eligible students from other disciplines in their junior or senior year. The seminar focuses on the development of research methodologies for the study of the ancient world. Subject varies with instructor, but the course will emphasize a combination of historical, linguistic, archaeological and anthropological approaches, reflecting the interdisciplinary nature of contemporary Classical Studies. May be repeated once for credit when topics vary. (Formerly titled "Seminar for Classics Majors.").

CLA 4991. Honors Thesis. (0-0) 1 Credit Hour.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee. Supervised research and preparation of an Honors Thesis for the purpose of earning Classical Studies Honors. May be repeated once with advisor approval.

CLA 4992. Honors Thesis. (0-0) 2 Credit Hours.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee. Supervised research and preparation of an Honors Thesis for the purpose of earning Classical Studies Honors. May be repeated once with advisor approval.

CLA 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee. Supervised research and preparation of an Honors Thesis for the purpose of earning Classical Studies Honors. May be repeated once with advisor approval.

College Success Seminar (CSS)

College Success Seminar (CSS) Courses

CSS 1201. College Success Seminar. (1-0) 1 Credit Hour.

A course to help students improve college-level study skills and mastery learning techniques based on current research. This course is taught within the Tomas Rivera Center. May be repeated.

Communication (COM)

Communication (COM) Courses

COM 1043. Introduction to Communication. (3-0) 3 Credit Hours. (TCCN = SPCH 1311)

Prerequisite: WRC 1013. Introduction to the fundamental processes of human communication, with emphasis on contexts such as interpersonal, group, and organizational communication. Emphasis is given to those skills that promote oral proficiency.

COM 1053. Business and Professional Speech. (3-0) 3 Credit Hours. (TCCN = SPCH 1321)

Prerequisite: WRC 1013. Examination of the basic communication process through oral channels with practical applications for business. Emphasis is on techniques of business and professional presentation, including components of message strategies, nonverbal communication, multimedia support, and persuasive speaking. Oral presentations with written components required.

COM 2113. Public Speaking. (3-0) 3 Credit Hours. (TCCN = SPCH 1315)

Prerequisite: WRC 1013. Theory and practice of speaking in formal settings. Emphasis on preparation, adaptation, and delivery of oral and visual presentations, as well as written analysis of historical speeches. May be applied toward the Core Curriculum requirement in the Component Area Option.

COM 2123. Oral Interpretation. (3-0) 3 Credit Hours. (TCCN = SPCH 2341)

Prerequisites: WRC 1013 and WRC 1023. Study of verbal and nonverbal communication, especially for aesthetic purposes, and of the dramaturgical skills that relate to the performing arts. Emphasis is given to those skills that promote oral proficiency.

COM 2343. Introduction to Mass Communication. (3-0) 3 Credit Hours. (TCCN = COMM 1307)

Prerequisites: WRC 1013 and WRC 1023. Critical examination of how the mass media interact with individuals and social groups. Exploration of media industries, products, and processes from various disciplinary perspectives.

COM 2433. Editing. (3-0) 3 Credit Hours.

Prerequisite: ENG 2413. Principles and applications of production editing and technical editing, including evaluation and revision of style, tone, and organization of documents. Practice in use of editing symbols and copy marking. (Same as ENG 2433. Credit cannot be earned for both COM 2433 and ENG 2433.)

COM 2733. Introduction to Communication Technologies. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013 and WRC 1023. Overview of media and networks used for entertainment and information distribution, storage, and retrieval. Emphasis on the interrelationships among technology, economics, policy, society, and culture.

COM 2801. Forensic Activities. (0-0) 1 Credit Hour. (TCCN = SPCH 2144)

Prerequisite: Consent of instructor. Opportunity to study the preparation and presentation of oral argument or speaking in competitive situations. May be repeated for credit.

COM 3023. Foundations of Communication. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013 and WRC 1023. Acquaints students with a range of disciplinary areas of study in communication. Addresses how communication influences our understandings of and in various social contexts and, in turn, how these understandings affect communicative choices. Addresses basic strategies and technologies used for information access, retrieval, and processing. Required of and restricted to pre-Communication students, or students majoring or minoring in Communication.

COM 3073. Conduct of Communication Inquiry. (3-0) 3 Credit Hours.

Prerequisite: COM 3023. Introduction to basic research methods as they apply to communication inquiry. Issues include applications of quantitative and qualitative research designs, descriptive and inferential statistics, and interpretation and critical evaluation of findings. Required of and restricted to pre-Communication students, or students majoring or minoring in Communication.

COM 3083. Language and Communication Theory. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in COM 3023. Overview of theories of language and communication. Focuses on understanding how language and communication affect individual and social action. Required of and restricted to pre-Communication students, or students majoring or minoring in Communication.

COM 3113. Argumentation and Debate. (3-0) 3 Credit Hours.

Prerequisite: COM 1043, COM 1053, or COM 2113. Offers the opportunity to train in the preparation, construction, and critical analysis of argumentation. Exercises in oral communication in adversarial situations.

COM 3243. Persuasion. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Communication major. Theory and practice of influencing attitudes, beliefs, opinions, and actions. Emphasis on critical evaluation of persuasive messages and design of persuasive campaigns.

COM 3253. Rhetorical Communication Analysis. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Communication major. Study of classical and contemporary rhetorical theory. Critical evaluation of communication messages and techniques of delivery.

COM 3293. Health Communication. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Communication major or consent of the instructor. Overview of the many ways in which health and illness affects and is affected by communication, emphasizing the interplay between communication, culture, identity, and relationships. This course introduces multiple communication issues relevant to the ways in which individuals negotiate health and illness including: contested meanings of health; the social construction of health and illness; how individuals experience and enact health; the influence on health interactions of social systems, culture and identity, social media, and organizational culture. Particular attention is paid to communicative influences on patient-provider interaction.

COM 3383. Interpersonal Communication. (3-0) 3 Credit Hours.

Prerequisite: COM 1053 or COM 3023. Theory and research of communication in personal and professional settings. The course stresses the social context of communication and emphasizes skills, knowledge, and motivation of verbal and nonverbal interaction. (Same as MGT 3253. Credit cannot be earned for both COM 3383 and MGT 3253.).

COM 3393. Communication for Health Professionals. (3-0) 3 Credit Hours.

Prerequisite: Restricted to students participating in the FAME program. This course will offer a broad overview of both theoretical and applied approaches to health communication that align with the TIME (Transformation in Medical Education) competencies. The overall goal for this course is to prepare students to communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds. Students will be exposed to a variety of health communication topics, including issues in provider-recipient communication, decision-making, social identity, family dynamics, the role of culture in health and disease, and healthcare delivery. Specifically, students will study how to engage in difficult conversations with families and patients regarding end of life treatment options and palliative care; delivery of bad news to patients and family members using a patient-centered approach; and verbal and nonverbal communication competencies when engaged as part of an interdisciplinary team. Additionally, a specific focus will be placed on conveying respect, compassion and empathy during medical interviews and delivering diagnoses and treatment. All theoretical and applied healthcare contexts examined in this course will be aligned with five core communication principles including: awareness, verbal communication, nonverbal communication, listening, and adapting.

COM 3413. Digital Media Production I. (3-0) 3 Credit Hours.

Prerequisites: COM 3023, ENG 2413, and enrollment as a Communication major. Introduction to issues and practices in the design of online information. Emphasis on writing and design practices in the context of various online information genres, including writing for the World Wide Web. Other topics may include hypertext theory and interactive design. (Formerly titled "Writing for New Media.").

COM 3523. Public Relations. (3-0) 3 Credit Hours.

Prerequisites: COM 3023, and enrollment as a Communication Major. Introduction to principles and practices of public relations. Some attention to public relations within multicultural communities.

COM 3533. Writing for Public Relations. (3-0) 3 Credit Hours.

Prerequisites: COM 3523 and ENG 2413. Exposure to techniques and skills associated with writing for public relations to create internal and external documents, such as news releases, reports, newsletters, feature stories, and brochures. Designed to enable students to become competent and versatile writers for a variety of publics. (Formerly COM 3513. Credit cannot be earned for both COM 3513 and COM 3533.).

COM 3553. Intercultural Communication. (3-0) 3 Credit Hours.

Prerequisites: COM 3023, and completion of or concurrent enrollment in COM 3083. Examination of differences in communication that arise from cultural and/or ethnic diversity. Emphasis on the verbal and nonverbal communicative patterns, conflict management, and decision-making processes of diverse cultures.

COM 3563. International Communication. (3-0) 3 Credit Hours.

Prerequisites: COM 3023, and completion of or concurrent enrollment in COM 3083. Examination of issues, conditions, and processes relating to world media systems. Consideration of theoretical and practical perspectives in key domains of interaction such as political economy, social development, and technology.

COM 3623. Commercial Publications. (3-0) 3 Credit Hours.

Prerequisites: COM 3023, ENG 2413, and enrollment as a Communication major. Theory and practice of commercial writing and desktop publishing. Includes discussion of document design, principles of layout, and typography.

COM 3633. Professional Presentation. (3-0) 3 Credit Hours.

Prerequisite: COM 1043, COM 1053, or COM 2113. Fundamentals of professional presentations including information exchange, problem solving, and persuasive proposals. Emphasis on the integration of oral presentation with written, graphic, and other media materials.

COM 3883. Small Group Communication. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Communication major. Theory and research in the communication processes of small groups. Emphasis on analysis of transactions in social and task-oriented groups.

COM 3893. Organizational Communication. (3-0) 3 Credit Hours.

Prerequisite: COM 1053 or COM 3023. Theory and research in organizational communication. Examination of the barriers to effective organizational communication; group communication and decision making; information flows through the formal and informal networks of organizations, and the means of evaluating organizational communication effectiveness. (Same as MGT 3123. Credit cannot be earned for both COM 3893 and MGT 3123.)

COM 4383. Relational Communication. (3-0) 3 Credit Hours.

Prerequisites: COM 3383, and enrollment as a Communication major. Examination of the transactional processes involved in the creation, maintenance, and termination of personal relationships. Analysis of current research and theories concerning the role and effects of communicating in friendship, marriage, and family relationships.

COM 4413. Topics in Communication. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Communication major. Intensive study of one or more specific issues in communication (e.g., contexts, theoretical perspectives, and/or research methods). May be repeated once for credit when topics vary.

COM 4523. Case Studies in Public Relations. (3-0) 3 Credit Hours.

Prerequisites: COM 3073, COM 3523, and COM 3533. Advanced study of public relations functions, principles, and practices using local, regional, and national organizations as examples.

COM 4533. Public Relations Planning and Campaigns. (3-0) 3 Credit Hours.

Prerequisites: COM 3623 and COM 4523 with a grade of "C-" or better. Application of public relations principles to the planning and production of messages and campaigns. Students will be expected to produce and carry out a public relations campaign within the community. This course fulfills the College of Liberal and Fine Arts Signature Experience.

COM 4723. Digital Media Production II. (3-0) 3 Credit Hours.

Prerequisites: COM 2433 and COM 3413 or consent of instructor. Theory and application of digital production formats, such as Web animation, digital photo production or digital film. This course fulfills the College of Liberal and Fine Arts Signature Experience.

COM 4813. Theory and Practice of Social Interaction. (3-0) 3 Credit Hours.

Prerequisites: Enrollment as a Communication major and senior standing. Advanced study of one or more specific topics in social interaction, such as relational communication, intergroup communication, family communication, health communication, and/or conflict. This course fulfills the College of Liberal and Fine Arts Signature Experience.

COM 4911. Independent Study in Communication. (0-0) 1 Credit Hour.

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

COM 4912. Independent Study in Communication. (0-0) 2 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

COM 4913. Independent Study in Communication. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

COM 4933. Internship in Communication. (0-0) 3 Credit Hours.

Prerequisites: Enrollment as a Communication major, senior standing, and consent of instructor. Supervised field experience in Communication. May be repeated once for credit, but only 3 semester credit hours may be counted toward major requirements. This course fulfills the College of Liberal and Fine Arts Signature Experience.

COM 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: Enrollment limited to candidates for graduation with University Honors. Supervised research and preparation of an honors thesis. May be repeated once with advisor approval.

Comparative Studies in the Humanities (CSH)

Comparative Studies in the Humanities (CSH) Courses

CSH 1103. Literary Masterpieces of Western Culture I. (3-0) 3 Credit Hours. (TCCN = ENGL 2332)

Representative masterworks of Western literature in translation. An examination of major texts from antiquity to the Renaissance that have shaped and expressed Western cultural traditions. Situation of literary works in the context of the development of civilization. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

CSH 1113. Literary Masterpieces of Western Culture II. (3-0) 3 Credit Hours. (TCCN = ENGL 2333)

Representative masterworks of Western literature in translation. An examination of major texts from the Renaissance to the present that have shaped and expressed Western cultural traditions. Situation of literary works in the context of the development of civilization. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

CSH 1213. Topics in World Cultures. (3-0) 3 Credit Hours. (TCCN = HUMA 2323)

Introductory overview of a specific culture or cultural area as revealed through the diversity of its heritage. Includes topics such as Hispanic, Francophone, German, Slavic, Judaic, Latin, Oriental, or African culture. All readings are from English language or translated materials. May be repeated for credit when topics vary. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

CSH 2113. The Foreign Film. (3-0) 3 Credit Hours.

An introduction to film as art and cultural expression. Emphasis on cinematic techniques, national traditions, genres, and the distinctive features of film as a humanistic medium. Films drawn from Latin America, Asia, Africa, and/or Europe. May be repeated for credit when topics vary. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

CSH 2313. Introduction to Literary Studies. (3-0) 3 Credit Hours.

Prerequisite: WRC 1023 or the equivalent. Offers the opportunity to develop an awareness of literature and the skills with which to approach and understand it. Examination of individual national traditions and the interrelationship of all literary traditions. Emphasis on the nature of genre, period, and style. (Formerly CSH 3313. Credit cannot be earned for both CSH 2313 and CSH 3313.)

CSH 3023. Studies in Comparative Literature. (3-0) 3 Credit Hours.

Prerequisite: WRC 1023 or the equivalent. Comparative investigation of foreign literature. Topics may include study of a genre, period, or motif, or comparison of authors across different languages. All readings are in English translation. May be repeated for credit when topics vary.

CSH 3823. Advanced Topics in World Cultures. (3-0) 3 Credit Hours.

Prerequisite: WRC 1023 or the equivalent. Comparative investigation of foreign cultures. Topics may include various combinations and aspects of Hispanic, Francophone, German, Slavic, Judaic, Latin or Oriental cultures. All readings are in English translation. May be repeated for credit when topics vary.

Computer Engineering (CPE)

Computer Engineering (CPE) Courses

CPE 4811. Computer Engineering Design I. (1-1) 1 Credit Hour.

Prerequisites: EE 3563, and completion of or concurrent enrollment in EE 4113. Business planning and project management in engineering design; discussion of ethical and social issues in design; and selection of a design project, development of a detailed design proposal, and approval of a design project.

CPE 4813. Computer Engineering Design II. (3-2) 3 Credit Hours.

Prerequisites: EE 4113 and CPE 4811. Complex system design; advanced ATE; project management, proposals, status reporting, formal oral and written technical reports, and business plans; open-ended design project considering safety, reliability, environmental, economic, and other constraints; and ethical and social impacts.

CPE 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CPE 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CPE 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CPE 4953. Special Studies in Computer Engineering. (3-0) 3 Credit Hours.

Prerequisites vary with the topic (refer to the course syllabus on Bluebook or contact the instructor). An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Computer Science (CS)

NOTE: All prerequisites for Computer Science (CS) courses must be completed with a grade of "C-" or better.

Computer Science (CS) Courses

CS 1023. Cultural Implications of the Information Society. (3-0) 3 Credit Hours. (TCCN = COSC 1300)

This course offers an examination of the modern information society and the influences of technological advances on society and culture. The emphasis is on information and its management from ethical, social, and legal perspectives. Students will make extensive use of the World Wide Web. May be applied toward the core curriculum requirement in World Society and Issues.

CS 1033. Microcomputer Applications. (3-0) 3 Credit Hours.

Study of the uses of the computer and the organization and visualization of data. Topics will be selected from library searching, networking, e-mail, spreadsheets, databases, authoring packages, multimedia and hypertext applications, presentation graphics, and legal/ethical issues. May not be applied toward a major in computer science. (Formerly CS 2083. Credit cannot be earned for both CS 1033 and CS 2083.)

CS 1063. Introduction to Computer Programming I. (3-0) 3 Credit Hours. (TCCN = COSC 1336)

Prerequisite: MAT 1073 or the equivalent. An introduction to computer programming using a modern object-oriented computer language. Topics include assignment, decisions, loops, methods and arrays using objects.

CS 1073. Introductory Computer Programming for Scientific Applications. (3-0) 3 Credit Hours.

Prerequisite: MAT 1073 or the equivalent. Introductory programming. Data representation, problem-solving methods, algorithm development and implementation, arrays and list structures, searching and sorting. May not be applied toward a major in computer science.

CS 1143. Web Design. (3-0) 3 Credit Hours.

Prerequisite: Computer literacy. Introduction to the process of planning, designing, and building a Web site. Concepts required to design and build interactive Web sites, including page design using XHTML, tables, CSS, and JavaScript. Design tools will be used to design and maintain Web sites.

CS 1153. Game Programming. (3-0) 3 Credit Hours.

Prerequisite: Computer literacy. Introduction to game design and programming. Common practices used in the video game industry today will also be introduced. Students will learn the basics of creating a PC game through lecture material, hands-on laboratories, and a final project in which the students will build a simple game.

CS 1173. Data Analysis and Visualization using MATLAB. (3-0) 3 Credit Hours.

Prerequisite: MAT 1023. Introduction to computation for data analysis and visualization using MATLAB. Programming concepts including functions, scripting, loops and logic, handling of vectors and structured data are explored in the context of working with and plotting real data. May be applied toward the Core Curriculum requirement in the Component Area Option. (Formerly titled "Computation for Scientists and Engineers.").

CS 1711. Introduction to Computer Programming II Recitation. (1-0) 1 Credit Hour. (TCCN = COSC 1437)

Prerequisite: CS 1063. Concurrent enrollment in CS 1713 is required. Recitation to accompany CS 1713. (Formerly titled "Introduction to Computer Science Recitation.").

CS 1713. Introduction to Computer Programming II. (3-0) 3 Credit Hours. (TCCN = COSC 1437)

Prerequisite: CS 1063. Concurrent enrollment in CS 1711 is required. Extended programming concepts including multidimensional arrays, pointers, dynamic memory allocation/deallocation and recursion. Problem solving methods, algorithm development and implementation. (Formerly titled "Introduction to Computer Science.").

CS 2073. Computer Programming with Engineering Applications. (3-0) 3 Credit Hours. (TCCN = ENGR 2304)

Prerequisites: MAT 1214 and completion of or concurrent enrollment in MAT 1224. Algorithmic approaches to problem solving and computer program design for engineers. Engineering and mathematically-oriented problem sets will be emphasized, including nonnumeric applications. Searching, sorting, linked lists, and data typing will be introduced. May not be applied toward a major in computer science.

CS 2121. Data Structures Recitation. (1-0) 1 Credit Hour. (TCCN = COSC 2436)

Prerequisites: CS 1711 and CS 1713. Concurrent enrollment in CS 2123 is required. Recitation to accompany CS 2123. (Formerly CS 1721. Credit cannot be earned for both CS 2121 and CS 1721.).

CS 2123. Data Structures. (3-0) 3 Credit Hours. (TCCN = COSC 2436)

Prerequisites: CS 1711 and CS 1713. Concurrent enrollment in CS 2121 is required. Abstract data structures (stacks, queues, lists, trees), recursion, sorting, and searching. Implementation of data structures using explicit memory management, and introduction to abstract data type design and encapsulation. (Formerly CS 1723. Credit cannot be earned for both CS 2123 and CS 1723.).

CS 2153. Game Design. (3-0) 3 Credit Hours.

Prerequisites: CS 1153. This course builds upon the lessons learned in CS 1153 Game Programming to examine in more detail the design and development of electronic games. The fundamentals of game design and development of electronic games. The fundamentals of game design will be examined in detail and the students will be responsible for building a game using a popular game engine.

CS 2233. Discrete Mathematical Structures. (3-0) 3 Credit Hours. (TCCN = MATH 2405)

Prerequisites: CS 1711, CS 1713, and MAT 1214. Survey and development of theoretical tools suitable for describing algorithmic applications. Propositional and predicate calculus, proofs, induction, order notation, recurrences and discrete structures. (Formerly 3233. Credit cannot be earned for both CS 2233 and CS 3233.).

CS 3333. Mathematical Foundations of Computer Science. (3-0) 3 Credit Hours.

Prerequisites: CS 1711, CS 1713, and MAT 1224. Survey and development of mathematical and statistical tools suitable for describing algorithmic applications. Vectors, matrices, combinatorics, probability and statistical models.

CS 3341. Analysis of Algorithms Recitation. (1-0) 1 Credit Hour.

Prerequisites: CS 2121, CS 2123, CS 2233, and CS 3333. Concurrent enrollment in CS 3343 is required. Recitation to accompany CS 3343.

CS 3343. Analysis of Algorithms. (3-0) 3 Credit Hours.

Prerequisites: CS 2121, CS 2123, CS 2233, and CS 3333. Concurrent enrollment in CS 3341 is required. Analysis of the performance of algorithms; discussion of programming techniques and data structures used in the writing of effective algorithms.

CS 3421. Systems Programming Recitation. (1-0) 1 Credit Hour.

Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 3423 is required. Recitation to accompany CS 3423. (Formerly CS 2411. Credit cannot be earned for both CS 3421 and CS 2411.).

CS 3423. Systems Programming. (3-0) 3 Credit Hours.

Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 3421 is required. A study of systems-level programming in a specific system (at present, Unix). Focus on concepts and tools to support the construction of systems programs. (Formerly CS 2413. Credit cannot be earned for both CS 3423 and CS 2413.).

CS 3433. Principles of Computer and Information Security. (3-0) 3 Credit Hours.

Prerequisites: CS 3421 and CS 3423. An introduction to the protection of computer systems and networks. Topics will include authentication, access controls, malicious software, formal security methods, firewalls, intrusion detection, cryptography and information hiding, risk management, computer forensics, and ethics.

CS 3443. Application Programming. (3-0) 3 Credit Hours.

Prerequisites: CS 2121 and CS 2123. Advanced application development in a current object-oriented language. Introduction to the software life cycle, best programming practices, and modern development tools.

CS 3723. Programming Languages. (3-0) 3 Credit Hours.

Prerequisites: CS 2233 and CS 3443. An introduction to high-level procedural, functional, and object-oriented programming languages, their theoretical foundations, organization, and implementation. Topics include formal syntax, compilers and interpreters, type systems, scoping and activation records, control structures, and data abstraction.

CS 3731. Operating Systems Recitation. (1-0) 1 Credit Hour.

Prerequisites: CS 3421, CS 3423, CS 3443, CS 3841, and CS 3843. Concurrent enrollment in CS 3733 is required. Recitation to accompany CS 3733.

CS 3733. Operating Systems. (3-0) 3 Credit Hours.

Prerequisites: CS 3421, CS 3423, CS 3443, CS 3841, and CS 3843. Concurrent enrollment in CS 3731 is required. An introduction to the functions and major techniques of a modern multiprogramming operating system. Includes exposure to the fundamentals of processor management, process synchronization, memory management, and peripheral management.

CS 3743. Introduction to Database Systems. (3-0) 3 Credit Hours.

Prerequisites: CS 2233, CS 3421, and CS 3423. Study of fundamentals of database systems. Topics include basic concepts, various data models, database design, storage systems, indexing and hashing, database application design and implementation, and commercially available database systems.

CS 3773. Software Engineering. (3-0) 3 Credit Hours.

Prerequisite: CS 3443. Introduction to different aspects of software engineering with the concentration on processes, methods, and tools for developing reliable software-centered systems. Study of software development process models, project management, a variety of modeling notations, requirement analysis, architecture design methods, and testing techniques.

CS 3793. Introduction to Artificial Intelligence. (3-0) 3 Credit Hours.

Prerequisites: CS 3341 and CS 3343. Discussion of theorem-proving by machine; includes computational linguistics, psychological modeling, and computer games.

CS 3841. Computer Organization Recitation. (1-0) 1 Credit Hour.

Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 3843 is required. Recitation to accompany CS 3843. (Formerly CS 2731. Credit cannot be earned for both CS 3841 and CS 2731.).

CS 3843. Computer Organization. (3-0) 3 Credit Hours.

Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 3841 is required. Organization of a computer system is introduced at block diagram level. Programming in assembly language and understanding the macroarchitecture of a computer is emphasized. Fundamentals of digital systems are introduced and the designs of various components used are investigated. (Formerly CS 2733. Credit cannot be earned for both CS 3843 and CS 2733.).

CS 3851. Computer Architecture Recitation. (1-0) 1 Credit Hour.

Prerequisites: CS 3421, CS 3423, CS 3841, and CS 3843. Concurrent enrollment in CS 3853 is required. Recitation to accompany CS 3853. (Formerly CS 4751. Credit cannot be earned for both CS 3851 and CS 4751.).

CS 3853. Computer Architecture. (3-0) 3 Credit Hours.

Prerequisites: CS 3421, CS 3423, CS 3841, and CS 3843. Concurrent enrollment in CS 3851 is required. Instruction set architecture, datapath and control unit design, advanced computer arithmetic, pipelining, memory hierarchy and I/O subsystem, performance issues. (Formerly CS 4753. Credit cannot be earned for both CS 3853 and CS 4753.).

CS 3873. Computer Networks. (3-0) 3 Credit Hours.

Prerequisites: CS 3841 and CS 3843. Network architecture, TCP/IP protocol suite, routing, data-link layer protocols, medium access control protocols, error detection and recovery, local area networks, wireless and mobile networks. (Formerly CS 4873. Credit cannot be earned for both CS 3873 and CS 4873.).

CS 4313. Automata, Computability, and Formal Languages. (3-0) 3 Credit Hours.

Prerequisites: CS 3341 and CS 3343. Discussion of abstract machines (finite state automata, pushdown automata, and Turing machines), formal grammars (regular, context-free, and type 0), and the relationship among them.

CS 4353. Unix and Network Security. (3-0) 3 Credit Hours.

Prerequisite: CS 3433. A technical survey of the fundamentals of computer and information security. Issues include cryptography, authentication, attack techniques at both the OS and network level, defense techniques, intrusion detection, scan techniques and detection, forensics, denial of service techniques and defenses, libpcap, libnet and libnet programming.

CS 4363. Cryptography. (3-0) 3 Credit Hours.

Prerequisites: CS 3341, CS 3343, and CS 3433. A course in pure and applied cryptography, with emphasis on theory. Topics may include conventional and public-key cryptosystems, signatures, pseudo-random sequences, hash functions, key management, and threshold schemes.

CS 4383. Computer Graphics. (3-0) 3 Credit Hours.

Prerequisites: CS 2121, CS 2123, CS 3341, and CS 3343. An introduction to two- and three-dimensional generative computer graphics. Display devices, data structures, mathematical transformations, and algorithms used in picture generation, manipulation, and display.

CS 4393. User Interfaces. (3-0) 3 Credit Hours.

Prerequisite: CS 3443. Study of advanced user interface issues. User interface design, human factors, usability, GUI programming models, and the psychological aspects of human-computer interaction.

CS 4413. Web Technologies. (3-0) 3 Credit Hours.

Prerequisites: CS 3421 and CS 3423. Fundamentals of Web and component technology: markup languages, layout design, client and server side programming, database and Web integration.

CS 4593. Topics in Computer Science. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Advanced topics in an area of computer science. May be repeated for credit when topics vary.

CS 4633. Simulation. (3-0) 3 Credit Hours.

Prerequisites: CS 3341 and CS 3343. Design, execution, and analysis of simulation models, discrete event simulation techniques, input and output analysis, random numbers, and simulation tools and languages.

CS 4713. Compiler Construction. (3-0) 3 Credit Hours.

Prerequisites: CS 3341, CS 3343, CS 3841, and CS 3843. An introduction to implementation of translators. Topics include formal grammars, scanners, parsing techniques, syntax-directed translation, symbol table management, code generation, and code optimization. (Formerly titled "Compiler Writing.").

CS 4723. Software Validation and Quality Assurance. (3-0) 3 Credit Hours.

Prerequisite: CS 3443. Study of software validation techniques. Introduction to static analysis and software testing approaches (functional testing, structural testing, integration testing and regression testing). Overview of test planning and test case design. Review of topics in quality assurance.

CS 4733. Project Management. (3-0) 3 Credit Hours.

Prerequisite: CS 3443. Introduction to principles and best practices for software project management. Topics include software process models, capability maturity model, metrics, cost estimation, software project planning, risk management, software configuration management, people management, and software management CASE tools.

CS 4743. Applied Software Engineering. (3-0) 3 Credit Hours.

Prerequisite: CS 3443. Introduction to principles and best practices for the development of software systems. Application of software engineering knowledge of process models, methods, and tools to the design, implementation, and testing of team-based software products.

CS 4773. Object-Oriented Systems. (3-0) 3 Credit Hours.

Prerequisite: CS 3443. An introduction of principles and methodologies of good software design. Study of object-oriented concepts and techniques, encapsulation, inheritance mechanisms, polymorphism, and programming in one or more object-oriented languages. Examination of design patterns that provide reusable solutions to problems in object-oriented design.

CS 4823. Introduction to Parallel Programming. (3-0) 3 Credit Hours.

Prerequisites: CS 3341, CS 3343, CS 3421, and CS 3423. Parallel programming concepts (partitioning, synchronization and communication, programming models-shared memory based and message based), programming tools and languages, performance issues.

CS 4833. Embedded Systems. (3-0) 3 Credit Hours.

Prerequisites: CS 3341, CS 3343, CS 3731, CS 3733, CS 3851, and CS 3853. Concepts and design principles of embedded systems. Microprocessor and hardware architecture, sensors and actuators, basic feedback control theory. Real-time scheduling, programming in embedded systems.

CS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CS 4933. Internship in Computer Science. (0-0) 3 Credit Hours.

Prerequisites: Junior or senior standing, an overall 2.5 grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Sciences. The opportunity for a semester-long work experience in a private business or public agency in a computer science-related position. Not more than 3 semester credit hours of CS 4933, and not more than a total of 6 semester credit hours of CS 4933 and independent study courses may count toward the Bachelor of Science degree in Computer Science. The grade report for this course is either "CR" (satisfactory participation in the internship) or "NC" (unsatisfactory participation in the internship).

CS 4953. Special Studies in Computer Science. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CS 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee. Supervised research and preparation of an honors thesis. May be repeated once with approval.

Construction Science and Management (CSM)

Construction Science and Management (CSM) Courses

CSM 2113. Construction Materials and Methods. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an Architecture, Interior Design, or Construction Science and Management major or permission of instructor. Introduction to materials, methods, equipment and sequences of the construction process including structural elements, components, and assemblies.

CSM 2143. Construction Materials and Testing. (3-0) 3 Credit Hours.

Prerequisites: CSM 2113, PHY 1603, and enrollment as a Construction Science and Management major or permission of instructor. Analysis of materials and methods used in the design and construction process with a particular emphasis on quality control, quality assurance, and testing including soils, concrete, steel, masonry, and wood.

CSM 2323. Construction Documents. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Introduction to construction documents and applicable software for use in communicating building design intentions to field personnel, including an understanding of how to interpret, explain, quantify and use construction documents to bid, construct and manage construction projects.

CSM 2333. Construction Culture and History. (3-0) 3 Credit Hours.

History of construction and building technologies in Western and non-Western cultures. Emphasis on work traditions, graphical illustrations, social and political concerns.

CSM 3011. Construction Industry Contemporary Issues. (1-0) 1 Credit Hour.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Exploration of various professional options and specialties across the construction industry, professional ethics and introduction to professional societies. Must be taken on a credit/no-credit basis.

CSM 3113. Construction Surveying. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Practical applications of surveying, including distance, grade and angular measurements, surveying equipment and its application to construction layout and control, surveying documentation and field work. (Formerly CSM 3111. Credit Cannot be earned for both CSM 3113 and CSM 3111.).

CSM 3123. Technical Communication. (3-0) 3 Credit Hours.

Prerequisites: MAT 1033 or MAT 1073 and enrollment as a Construction Science and Management major or permission of instructor. Visualization, interpretation and communication of graphical geometry in construction design and engineering; graphical analysis of problems; plan reading; computer aided design, and fundamentals of information modeling software; introduction to common quantitative tools in construction.

CSM 3143. Structures I. (3-0) 3 Credit Hours.

Prerequisites: PHY 1603 and enrollment as a Construction Science and Management major or permission of instructor. Introduction to the physical principles that govern classical statics and strengths of materials through the design of concrete, timber, and steel components of structures.

CSM 3621. Construction Safety I. (1-0) 1 Credit Hour.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Introduction to safety and safety programs, workers' compensation, OSHA organization and structure, safety policies, standards, and record keeping. Emphasis on communication and job-site safety ethics and management.

CSM 4013. Construction Estimating I. (3-0) 3 Credit Hours.

Prerequisites: CSM 2113 and CSM 3123. Introduction to estimating procedures for buildings related to quantity surveying, cost of materials and labor, life-cycle costs, and applicable software. (Formerly ARC 4013. Credit cannot be earned for both CSM 4013 and ARC 4013.)

CSM 4023. Construction Estimating II. (2-2) 3 Credit Hours.

Prerequisites: CSM 2143 and CSM 4013. Continuation of CSM 4013 with emphasis on pricing work, subcontracting, and bidding strategies utilizing applicable software. (Formerly ARC 4023. Credit cannot be earned for both CSM 4023 and ARC 4023.)

CSM 4143. Structures II. (3-0) 3 Credit Hours.

Prerequisite: CSM 3143. Analysis and design of structural members in steel, reinforced concrete, reinforced masonry and their relationship to design and construction.

CSM 4513. Project Management. (3-0) 3 Credit Hours.

Prerequisite: CSM 3123. Introduction to project management of the construction process and integration with allied professions. Introduction to applicable software. (Formerly ARC 4613. Credit cannot be earned for both CSM 4513 and ARC 4613.)

CSM 4523. Project Planning and Scheduling. (2-2) 3 Credit Hours.

Prerequisite: CSM 4513. Continuation of CSM 4513 with emphasis on scheduling and project delivery methods utilizing applicable software. (Formerly ARC 4623. Credit cannot be earned for both CSM 4523 and ARC 4623.) (Formerly titled "Construction Management II.")

CSM 4533. Building Information Modeling for Construction Management. (2-2) 3 Credit Hours.

Prerequisite: CSM 3123. Introduction to techniques used in development and management of Building Information Models. Emphasis on constructability and management.

CSM 4613. Sustainable Building Practice. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Ethics and application of environmental sustainability practice in building construction. Introduction to U.S. Green Building Council LEED program standards, methods, and procedures as applied to construction documents interpretation and construction.

CSM 4623. Construction Safety. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Development and management of safety programs, worker's compensation, OSHA compliance, safety policies, standards, and record keeping.

CSM 4633. Construction Law. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Legal and ethical aspects of construction contracts, bonds, insurance, and bidding. Owner, architect, contractor, and subcontractor relationships.

CSM 4643. Mechanical, Electrical and Plumbing Systems. (2-2) 3 Credit Hours.

Prerequisite: CSM 4533 or permission of instructor. Building systems with an emphasis on design, installation and control of heating, ventilation and cooling, plumbing and drainage, electrical, fire and lightning protection systems.

CSM 4713. Construction Capstone. (2-2) 3 Credit Hours.

Prerequisites: CSM 4523, CSM 4023, CSM 4633, and CSM 4643. Senior capstone project emphasizing integration of the design and construction processes. Project delivery systems, project development, estimating, scheduling and project controls of various types of construction projects.

CSM 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

CSM 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

CSM 4916. Independent Study. (0-0) 6 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

CSM 4931. Summer Internship. (0-0) 1 Credit Hour.

Prerequisites: CSM 2323, CSM 3011, and CSM 3621. This is a full-time, on-site, construction work experience. Supervision by qualified construction manager and intern mentor to prepare the intern for building construction management functions. Instructor prior approval of details for individual work experience required. Must be repeated for credit and taken in consecutive five-week summer sessions.

CSM 4932. Internship. (0-0) 2 Credit Hours.

Prerequisites: CSM 2323, CSM 3011, and CSM 3621. This is a part-time, on-site, construction work experience. Supervision by qualified construction manager and intern mentor to prepare the intern for building construction management functions. Instructor prior approval of details for individual work experience required.

CSM 4933. Summer Internship. (0-0) 3 Credit Hours.

Prerequisite: CSM 4623. This is a full-time, on-site, construction work experience during summer semester. Supervision by qualified construction manager and intern mentor to prepare the intern for building construction management functions. Instructor prior approval of details for individual work experience required.

CSM 4943. Internship I. (0-0) 3 Credit Hours.

Prerequisite: CSM 4623. This is a part-time, on-site, construction work experience during fall or spring semesters. Supervision by qualified construction manager and intern mentor to prepare the intern for building construction management functions. Instructor prior approval of details for individual work experience required.

CSM 4946. Internship II. (0-0) 6 Credit Hours.

Prerequisite: CSM 4623. This is a full-time, on-site, construction work experience during fall or spring semesters. Supervision by qualified construction manager and intern mentor to prepare the intern for building construction management functions. Instructor prior approval of details for individual work experience required.

CSM 4951. Special Studies in Construction Science and Management. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 3 hours for CSM 4951, 6 hours for CSM 4953, or 12 hours for CSM 4956, regardless of discipline, will apply to a bachelor's degree.

CSM 4953. Special Studies in Construction Science and Management. (0-6) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 3 hours for CSM 4951, 6 hours for CSM 4953, or 12 hours for CSM 4956, regardless of discipline, will apply to a bachelor's degree.

CSM 4956. Special Studies in Construction Science and Management. (0-12) 6 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 3 hours for CSM 4951, 6 hours for CSM 4953, or 12 hours for CSM 4956, regardless of discipline, will apply to a bachelor's degree.

Counseling (COU)

Counseling (COU) Courses

COU 2103. Personal Career Planning and Occupational Exploration. (3-0) 3 Credit Hours.

Exploration of career/life planning as a process with a focus on issues and obstacles that can impact an individual's career choices. Knowledge of career development theories and decision-making models, current national and state-specific labor market trends, career and occupational resources will be presented. Course will include opportunities for self-assessment and career assessment results, including interest, personality, values clarification inventories and skills identification as they relate to occupational choices. Recommended for undecided/undeclared majors.

COU 3103. Helping Skills. (3-0) 3 Credit Hours.

This course is designed to create an understanding of the helping relationship. Basic communication/counseling techniques (such as active listening, responding, and interviewing) for facilitating helping relationship skills are developed.

Criminal Justice (CRJ)

Criminal Justice (CRJ) Courses

CRJ 1113. The American Criminal Justice System. (3-0) 3 Credit Hours. (TCCN = CRIJ 1301)

Philosophy and history of criminal justice in America; examination of criminal justice agencies operating as an interacting system: police and security agencies, courts, and corrections. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences.

CRJ 2153. Criminological Theory. (3-0) 3 Credit Hours. (TCCN = CRIJ 1307)

A multidisciplinary survey of theories of crime causation and social control. Major topics covered include: theory construction, theory-methods, symmetry, evaluating theory, theoretical integration, and applied criminology. (Formerly titled "Nature of Crime and Justice").

CRJ 2213. Introduction to Policing. (3-0) 3 Credit Hours. (TCCN = CRIJ 2328)

An introduction to American policing organizations (public and private), history of policing, modern community policing practices, and important trends in law enforcement.

CRJ 2513. Introduction to Corrections. (3-0) 3 Credit Hours. (TCCN = CRIJ 2313)

A study of the history, philosophy, and practice of corrections in America. Theories and practices of incarceration; legal and administrative issues surrounding imprisonment and the death penalty. (Formerly titled "Corrections: Theory and Practice.").

CRJ 2813. Introduction to Courts and the Legal System. (3-0) 3 Credit Hours. (TCCN = CRIJ 1306)

Examines state and federal American court systems, their powers, remedies, limitations, and procedures; and the contributions of courts to governance.

CRJ 3013. Research Design and Analysis in Criminal Justice. (3-0) 3 Credit Hours.

Provides students with an opportunity to be knowledgeable consumers of criminal justice research. Provides an overview of principles of scientific inquiry, research designs, and statistical concepts and techniques. Introduction to interpretation of data analysis and preparation of research reports.

CRJ 3123. Investigations. (3-0) 3 Credit Hours.

Examination of the investigative process. Focus on the history, structure, and success rates of investigation units, theories of investigation, and the information that is used to produce case clearances. (Formerly CRJ 4123. Credit cannot be earned for both CRJ 3123 and CRJ 4123.).

CRJ 3213. Managing Criminal Justice Organizations. (3-0) 3 Credit Hours.

Examines bureaucratic, political and other characteristics of justice organizations through a review of theories of public administration and organizational behavior. Applies theories to problems and policies encountered in managing criminal justice agencies.

CRJ 3233. Introduction to Forensic Science. (3-0) 3 Credit Hours.

Enrollment limited to upper-division criminal justice majors. This course will expose students to the nature of physical evidence and its part in our criminal justice system, an introduction to basic scientific and legal principles involved with the utilization of physical evidence, and exposure to specific items of physical evidence to include their components, manufacture, methods of analysis, and value in case work. (Formerly CRJ 3133. Credit cannot be earned for both CRJ 3233 and CRJ 3133.).

CRJ 3533. Community Corrections. (3-0) 3 Credit Hours.

History, philosophy, and practice of community supervision of offenders. Examination of various intermediate punishments including boot camps, intensive probation supervision, electronic monitoring, restitution, and community service. (Formerly titled "Probation, Parole and Intermediate Sanctions").

CRJ 3563. Juvenile Justice. (3-0) 3 Credit Hours.

Examination of the history of adolescence and the development of the juvenile justice system. An in-depth study of police, courts and corrections as applied to youth. Consideration of youth as both offenders and victims. Topics include child abuse, youth gangs, waiver/transfer of youth to the adult court and juvenile offending.

CRJ 3573. Restorative Justice. (3-0) 3 Credit Hours.

Provides students with a detailed study of the principles and practices of restorative justice aimed at creating a just peace within a community, a just public order for the community, vindication for victims and opportunities for accountability and restoration to offenders.

CRJ 3623. Substantive Criminal Law. (3-0) 3 Credit Hours.

Jurisprudential philosophy and case study of common law and statutory crimes. Includes functions and development of substantive criminal law, elements of specific offenses, and defenses.

CRJ 3713. Ethics in Criminal Justice Practice. (3-0) 3 Credit Hours.

Survey of major schools of ethics theory; sources of ethical and philosophical foundations for criminal justice functions; common quandaries confronting officers, supervisors, and executives in justice organizations. Examines the role of criminal justice within modern civil societies.

CRJ 4303. Victimology. (3-0) 3 Credit Hours.

This course will familiarize students with victimology concepts, theories, and literature as a field of study within criminology. Topics may include nature and incidence of victimization, victim and offender relationships, victim justice, victim rights and services. Consideration may be given to responses to victims with special needs and crime prevention strategies. (Formerly titled "Victims and the Justice System.")

CRJ 4403. Race, Ethnicity, and Criminal Justice. (3-0) 3 Credit Hours.

This course examines experiences of racial and ethnic groups in the criminal justice system. Topics include: the nature and extent of overrepresentation by racial and ethnic minorities as justice system clients, culture-specific crime and victimization patterns, research evidence and theoretical explanations for these patterns. (Formerly CRJ 4313. Credit cannot be earned for both CRJ 4403 and CRJ 4313.)

CRJ 4413. Contemporary Police Practices. (3-0) 3 Credit Hours.

A survey of leading research-based law enforcement practices for crime prevention and problem solving.

CRJ 4443. Special Topics in Policing and Crime Prevention. (3-0) 3 Credit Hours.

Considers special topics in policing and crime prevention not ordinarily evaluated in depth in other courses, such as comparative policing systems, personnel issues, police civil and criminal liabilities, job satisfaction and stress, diversity issues, ethics, police use of force, and future of policing. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CRJ 4453. Drugs and Crime. (3-0) 3 Credit Hours.

An overview of the scope and role of drugs in society and the relationship between illicit substances and crime. Leading theories of drug use and enforcement will be surveyed. Major topics include: the social construction of drug issues, the war on drugs, drug control policy, and the function of drugs in popular cultural mediums. Contemporary topics to be examined include: asset forfeiture, the confidential informant role in drug enforcement, drug ethnography, corrections-based substance abuse treatment, and drug enforcement strategies.

CRJ 4463. Gender and Crime. (3-0) 3 Credit Hours.

This course examines gender differences in criminal offending and victimization. Topics also include traditional and gender-specific theories offered to explain female involvement in crime, the experience of female victims and offenders in the criminal justice system, and women working in the criminal justice system. (Formerly CRJ 4313. Credit cannot be earned for both CRJ 4463 and CRJ 4313.)

CRJ 4603. Institutional Corrections. (3-0) 3 Credit Hours.

This course introduces students to theory and research in the areas of institutional corrections and penology. Topics include the history of the use of incarceration in the United States, the influence of sentencing philosophies and practices on incarceration, the organization and management of prisons, and critical issues related to prison staff and inmates.

CRJ 4633. Constitutional Criminal Procedure. (3-0) 3 Credit Hours.

A procedurally oriented discussion of criminal law, including law of arrest, search and seizure, preliminary examination, bail, the grand jury, indictment and information, arraignment, trial, and review.

CRJ 4653. White Collar Crime. (3-0) 3 Credit Hours.

Study of the theory, nature, scope, and impact of occupational, political, and organizational/corporate crime. Comparison of white collar crime to street crime. Examination of the structural foundations for these types of crimes and current and future systems for control of white collar crimes.

CRJ 4663. Special Topics in Corrections. (3-0) 3 Credit Hours.

Considers special topics in corrections not ordinarily evaluated in depth in other courses, such as the death penalty, special correctional populations, and correctional administration. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. (Formerly titled "Special Topics in Corrections and Juvenile Justice.")

CRJ 4703. Life Course Criminology. (3-0) 3 Credit Hours.

Life course criminology has developed into a leading theoretical framework for studying criminal offenders. This course provides an overview of age-graded explanations of antisocial conduct and cutting-edge empirical research on the causes of antisocial behavior during various developmental periods including childhood, adolescence, and adulthood. The role of both biology and the environment in explaining antisocial conduct over the lifespan is emphasized, and the implications of this research for developing age-appropriate interventions are explored.

CRJ 4833. Violent Crime. (3-0) 3 Credit Hours.

Examination of various forms of violence including homicide, robbery, assault and rape. Discussion of major theories of violent personal behavior and examination of historical and current data on violent crime. Consideration of rates of violent crime, how these rates have changed, and factors that contribute to violent crimes.

CRJ 4843. Study Abroad: International Criminal Justice. (3-0) 3 Credit Hours.

Prerequisite: Permission of instructor. A lecture/seminar course associated with a study abroad program related to the study of cross-cultural differences in crime and applications of criminal justice systems and practice. Involves international travel and field trips. May be repeated for credit when the destination country varies.

CRJ 4863. Special Topics in Legal Issues and Adjudication. (3-0) 3 Credit Hours.

Considers special topics in courts and adjudication not ordinarily evaluated in depth in other courses, such as judicial administration, specialized courts, judicial intervention and emerging areas of criminal law. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CRJ 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

CRJ 4933. Internship in Criminal Justice. (0-0) 3 Credit Hours.

Prerequisites: CRJ 1113, CRJ 2153, and CRJ 3013; consent of academic advisor and Internship Coordinator. Supervised experience in an administrative setting that provides the opportunity to integrate theory and practice in justice-related agencies. May be repeated for credit in a subsequent semester when agency setting varies, but not more than 6 semester credit hours will apply to a bachelor's degree.

CRJ 4953. Special Studies in Criminal Justice. (3-0) 3 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of regular course offerings. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

CRJ 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for Honors in Criminal Justice during the last two semesters; completion of honors examination and approval by the honors program coordinator. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Curriculum and Instruction (C&I)

Curriculum and Instruction (CI) Courses

C&I 4203. Models of Teaching in the Content Areas of the Secondary School. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. Prior or concurrent enrollment in EDP 4203 is required. Not required for music majors. Study of curricular, instructional, and management approaches to subject areas taught in the secondary schools. Emphasis on developing instructional and curricular strategies that are effective in teaching content areas. Course will address special population of students, application of instructional media, technology, and classroom management for the content areas. This course may be offered in multiple sections according to subject-matter emphasis. Not offered in the summer. Restricted course; advisor code required for registration. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4646 Student Teaching: Grades 8–12. This course must be completed with a grade of "C-" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. Field experience.

C&I 4213. Approaches to Teaching Music. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. Designed to provide preservice music teachers with the necessary knowledge and skills to prepare for successfully planning, implementing, and evaluating music instruction. Field experience required.

C&I 4303. Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, C&I 4353, C&I 4403, ECE 4203, and RDG 3823. Concurrent enrollment in ECE 4143 and RDG 4833 is required. May not be taken concurrently with C&I 4353, C&I 4403, ECE 4203 or RDG 3823. A study of methods, materials, and processes for teaching social studies incorporating the language arts and fine arts. Topics include the effective implementation of social studies curriculum, instruction, assessment and evaluation from EC–grade 6. Special emphasis is placed on integrating the various social sciences through thematic teaching. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required.

C&I 4353. Approaches to Teaching Science EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4403, ECE 4203 and RDG 3823 is required. A study of pedagogical approaches, materials, and resources designed to support children's meaningful exploration, discovery, and construction of basic concepts and skills in EC–Grade 6. Emphasis in the course will be on the interrelatedness of science in the daily lives of students, unifying concepts and processes common to all sciences, development of effective learning environments for science both inside and outside of the classroom, planning and implementation of inquiry-based science lessons, assessment of student learning, and the use of an integrated approach to teaching. This course must be completed with a grade of "B-" or better for students to enroll in Block C courses. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. (Same as BBL 4353. Credit cannot be earned for both C&I 4353 and BBL 4353.)

C&I 4403. Approaches to Teaching Mathematics EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4353, ECE 4203 and RDG 3823 is required. This course involves the study of instructional methods and materials that support diverse children's meaningful exploration, discovery, and development of basic concepts and skills in mathematics from EC–Grade 6. Emphasizing a constructivist approach to the teaching and learning of mathematics, this course also advances the use of technology to facilitate mathematics understanding. Attention will be given to understanding the interrelatedness of mathematics and other content areas, creating effective learning environments, planning and implementing lesson plans to meet the differentiated needs of a wide variety of learners, and assessing student learning in mathematics. This course must be completed with a grade of "B-" or better for students to enroll in Block C courses. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. (Same as BBL 4403. Credit cannot be earned for both C&I 4403 and BBL 4403.).

C&I 4433. Approaches to Teaching Science–Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4443, C&I 4603, C&I 4623, and RDG 3533 in semester prior to student teaching. Study of curricula, instructional, and management approaches to teaching science grades 4–8. This course emphasizes a constructivist approach in developing inductive and inquiry teaching methods. Special emphasis is placed on the integration of technology in diverse learning environments. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. (Formerly C&I 4413. Credit cannot be earned for more than one of the following: BBL 4433, C&I 4413, or C&I 4433.).

C&I 4443. Approaches to Teaching Mathematics–Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4433, C&I 4603, C&I 4623 and RDG 3533 in semester prior to student teaching. Study of curricula, instructional, and management approaches to teaching mathematics grades 4–8. This course emphasizes a constructivist approach to the teaching of mathematics, including the use of technology in diverse learning environments. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. (Formerly C&I 4423. Credit cannot be earned for more than one of the following: BBL 4443, C&I 4423, or C&I 4443.).

C&I 4543. Approaches to Teaching Social Studies–Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4553, C&I 4603, C&I 4623, and RDG 3533 in semester prior to student teaching. This course emphasizes student-centered curricula that meet the needs of diverse students in grades 4–8. Preservice teachers examine models of teaching and learning to develop the knowledge, values, and experiential bases necessary for effective teaching. Students will demonstrate proficiency by creating lesson plans that specifically address the 4th–8th grade Social Studies standards as well as integrate other content, incorporate technology, and address diversity. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. (Formerly C&I 4513. Credit cannot be earned for both C&I 4543 and C&I 4513.).

C&I 4553. Approaches to Service-Learning in Social Studies–Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4443, C&I 4543, C&I 4603, C&I 4623, and RDG 3533 in semester prior to student teaching. This course examines the philosophy, methodology, and components of service-learning. Service-learning is the engagement of students in activities designed to address or meet a community need, where students learn how their service makes a difference to themselves and in the lives of the service recipients, and where learning is intentionally linked to academics. Students will design a service-learning project having social studies as the focus. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. (Formerly C&I 4523. Credit cannot be earned for both C&I 4553 and C&I 4523.).

C&I 4603. Mathematics and Science Approaches and Classroom Management Strategies–Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4433, C&I 4443, C&I 4623, and RDG 3533 in semester prior to student teaching for Grades 4–8 Mathematics/Science Certification Option; Concurrent enrollment in C&I 4543, C&I 4553, C&I 4623, and RDG 3533 for Grades 4–8 Language Arts/Reading/Social Studies Certification Option Concurrent enrollment in C&I 4433, C&I 4443, C&I 4543, C&I 4623 for Grades 4–8 Generalist Certification Option. Preservice teachers will design developmentally appropriate mathematics and science curriculum, instruction, and assessment. Preservice teachers will also identify effective classroom management strategies. This course must be completed with a grade of "C-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. (Credit cannot be earned for both C&I 4603 and BBL 4603.).

C&I 4616. Student Teaching: Early Childhood–Grade 6. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; completion of all requirements for admission to the EC–6 student teaching semester, and completion of 21 semester credit hours of Professional Education: C&I 4303, C&I 4353, C&I 4403, ECE 4143, ECE 4203, RDG 3823, and RDG 4833. A grade of “B-” or better in C&I 4303, C&I 4353, C&I 4403, RDG 3823, and RDG 4833. A grade of “C-” or better is required for C&I 4616 to be recommended for teacher certification. Individuals must apply to the director of student teaching one semester in advance. Bilingual EC–6 prerequisites: Admission to the Teacher Certification Program; completion of all requirements for admission to the EC–6 student teaching semester, completion of 18 semester credit hours of Professional Education: BBL 4033, BBL 4063, BBL 4073, BBL 4353, BBL 4403, and RDG 3823. Full semester of full-day student teaching in a regular or bilingual EC–grade 6 classroom under the supervision of University faculty. Student teacher will be responsible for planning, implementing, and evaluating instruction in collaboration with the cooperating teacher and in conjunction with the UTSA supervisor. Seminars explore issues in teaching practice.

C&I 4623. Applied Teaching: Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4433, C&I 4443, C&I 4603, and RDG 3533 for Grades 4–8 Mathematics/Science Certification Option; C&I 4543, C&I 4553, C&I 4603, and RDG 3533 for Grades 4–8 Language Arts/Reading/Social Studies Certification Option; C&I 4433, C&I 4443, C&I 4543, C&I 4603, and RDG 3533 for Grades 4–8 Generalist Certification Option. This field experience course provides preservice teachers the opportunity to work with students in grades 4–8 in school settings under the supervision of a university instructor. This course must be completed with a grade of “B-” or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8.

C&I 4626. Student Teaching: Grades 4–8. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; completion of all requirements to the 4–8 student teaching semester, including all relevant practice TExES examinations, and completion of 21 semester credit hours: C&I 4603, EDP 3303, ESL 3063, MAT 1023, RDG 3533, RDG 3633, RDG 3803. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. Individuals must apply to the director of student teaching one semester in advance. 4–8 Generalist students: A grade of “B-” or better is required for RDG 3533. A grade of “C-” or better is required for C&I 4603. 4–8 Mathematics/Science students: The following courses completed with a grade of “B-” or better: C&I 4433, C&I 4443, C&I 4603, RDG 3523, and RDG 3533. 4–8 Language Arts, Reading, and Social Studies students: The following courses completed with a grade of “B-” or better: C&I 4543, C&I 4553, RDG 3523, RDG 3533, RDG 3633. 4–8 ESL students: Completion of a minimum of 15 semester credit hours of the ESL specialization; and completion of ESL 4003, EDU 2103, EDP 3303, EDP 4203, or BBL 5053. 4–8 Bilingual students: Completion of all requirements for admission to the Bilingual 4–8 student teaching semester, and completion of 15 semester credit hours of Professional Education: BBL 4033, BBL 4063, BBL 4073, C&I 4433 or C&I 4443, and C&I 4603. Full semester of full-day student teaching in a regular upper elementary/middle school classroom under the supervision of University faculty is required. Student teacher will be responsible for planning, implementing, and evaluating instruction in collaboration with the cooperating teacher and in conjunction with the UTSA supervisor. Seminars explore issues in teaching practice.

C&I 4646. Student Teaching: Grades 8–12. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program and the student teaching semester, and completion of C&I 4203, EDP 3203, EDP 4203, and RDG 3773. Can lack no more than 6 hours in content subject matter. A grade of “B-” or better in C&I 4203. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. Individuals must apply to the director of student teaching one semester in advance. Full semester of full-day student teaching in grades 8–12. Student teacher will be responsible for planning, implementing, and evaluating instruction in collaboration with the cooperating teacher and in conjunction with the UTSA supervisor. Individuals pursuing a Basic Secondary Certificate, Concentration A, will student teach in the single teaching field for which certification is sought. Individuals with two teaching fields will student teach in their major teaching field. Seminars explore issues in teaching practice.

C&I 4716. Student Teaching: All Level EC–12. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; completion of all requirements for the All-Level student teaching semester. All Level Physical Education students: Completion of KIN 4203 and KIN 4303 with a grade of “C-” or better. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. All Level Health Education students: Completion of C&I 4203, and EDP 3303 with a grade of “C-” or better. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. Special Education students: All courses required for the degree and certification in All Level special education must be completed prior to student teaching. SPE 3653 and SPE 4653 must be completed with a grade of “B-” or better to serve as prerequisites for C&I 4716. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. All Level Music students: Completion of C&I 4203, C&I 4213, EDP 3203, and RDG 3773. A grade of “C-” or better in C&I 4203 and C&I 4213. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. All Level Art students: Completion of all requirements for admission to the student teaching semester, and C&I 4203, EDU 2103, EDP 3203 or EDP 3303, EDP 4203, and RDG 3523 or RDG 3773. A grade of “B-” or better in C&I 4203. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. Languages other than English students: Completion of all requirements for admission to the student teaching semester, and C&I 4203, EDP 3203, EDP 4203, and RDG 3773. Can lack no more than 6 hours in content subject matter. A grade of “B-” or better in C&I 4203. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. All courses for degree/certification plan must be completed prior to student teaching. Full semester of full-day student teaching in an elementary or middle school setting and in a high school setting (grades 8–12) in the certificate area sought. Student teacher will be responsible for planning, implementing, and evaluating instruction in collaboration with the cooperating teacher and in conjunction with the UTSA supervisor. Meets student teaching requirements for the All-Level certificate. Seminars explore issues in teaching practice. A grade of “C-” or better is required for the student teaching course to be recommended for teacher certification. Individuals must apply to the director of student teaching one semester in advance.

C&I 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

C&I 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

C&I 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

C&I 4923. Internship in Education. (0-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; a bachelor's degree; completion of all coursework requirements for the certification program; consent of the Interdisciplinary Education Advising and Certification Center; and consent of the director of student teaching. Internships to be jointly supervised by an employing school district and UTSA. Experiences will relate to the intern as the teacher-of-record in the classroom. May be repeated for credit.

C&I 4926. Internship in Education. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; a bachelor's degree; completion of all coursework requirements for the certification program; consent of the Interdisciplinary Education Advising and Certification Center; and consent of the director of student teaching. Internships to be jointly supervised by an employing school district and UTSA. Experiences will relate to the intern as the teacher-of-record in the classroom. May be repeated for credit.

Dance (DAN)

Dance (DAN) Courses

DAN 1013. Ballet I. (3-0) 3 Credit Hours.

An introductory course in ballet for those who have no previous ballet experience. Students will learn the format of a ballet class and incorporate ballet terminology with the positions and movements of the body.

DAN 1113. Introduction to Modern Dance. (3-0) 3 Credit Hours.

An introduction to modern dance technique. Students will learn basic modern dance techniques by studying various choreographers and movements throughout the history of modern dance. (Formerly MUS 2763. Credit cannot be earned for both DAN 1113 and MUS 2763.)

DAN 2003. Introduction to Dance. (3-0) 3 Credit Hours. (TCCN = DANC 2303)

A survey of various dance styles, including ballet, modern, social, and world dance. Designed to provide the opportunity for students to increase their awareness of dance and how dance informs cultural values. May be applied toward the Core Curriculum requirement in Creative Arts.

DAN 2013. Ballet II. (3-0) 3 Credit Hours.

An intermediate course designed for students who have had at least one year of ballet training. Further refinement of technique, alignment, strength, balance, and flexibility will be achieved through barre and centre floor work.

DAN 2113. Modern Dance II. (3-0) 3 Credit Hours.

An intermediate course designed for students who have had at least one year of modern dance experience. Students will refine modern dance technique through floor and centre work, and by studying various movements and styles relevant to current modern dance technique.

DAN 2213. Jazz and Musical Theater Dance. (3-0) 3 Credit Hours.

Introduction to jazz dance techniques with emphasis on how dance is applied in musical theatre. Dance styles will include but are not limited to tap, step, and swing. Students will also study the styles of known musical choreographers such as Bob Fosse and Jerome Robbins while developing performance technique and facial expression. (Formerly MUS 2773. Credit cannot be earned for both DAN 2213 and MUS 2773.)

DAN 2783. Topics in Dance. (3-0) 3 Credit Hours.

Studio dance instruction and survey focused on a genre of dance. May be repeated for credit when topics vary. (Formerly MUS 2783.)

DAN 3013. Ballet III. (3-0) 3 Credit Hours.

An advanced course designed for students who have had at least two years of ballet training. Further refinement of technique, alignment, strength, balance, and flexibility will be achieved through barre and centre floor work.

DAN 3103. History of Dance. (3-0) 3 Credit Hours.

An overview of the history of dance from ancient civilizations through the present. The importance and role of dance within major civilizations and historical periods will be presented. Students will study major dance movements, choreographers, and notable dancers throughout history. (Formerly DAN 2103. Credit cannot be earned for both DAN 2103 and DAN 3103.)

DAN 3113. Modern Dance III. (3-0) 3 Credit Hours.

An advanced course designed for students who have had at least two years of modern dance experience. Further refinement of technique, strength, balance, and flexibility will be achieved through floor and centre work.

Demography (DEM)

Demography (DEM) Courses

DEM 4963. Social Demography and Public Policy. (3-0) 3 Credit Hours.

This course will cover the basic areas of demography (fertility, mortality, and migration—both internal and international). Students will also be exposed to methods of demographic research to carry out demographic research projects. As part of the course, students will conduct demographic analysis using real data. A strong focus of the course will be discussing the implications for demographic analysis in terms of local, regional and national policy discussions.

Early Childhood (ECE)

Early Childhood (ECE) Courses

ECE 3133. Programs and Policies in Early Childhood Education. (3-0) 3 Credit Hours.

This course is a survey of historical, philosophical, and sociocultural foundations of early childhood programs and policies. Students will examine past and current trends in early childhood education and their impact on early childhood practices and policies. A variety of early childhood programs-national and international, traditional and culturally responsive, federal and state-funded-will be examined. Early childhood policies and their impact on teachers and students will be discussed at length.

ECE 3143. Child Growth and Development. (3-0) 3 Credit Hours.

Concurrent enrollment in ECE 3313 and ECE 3603 is required. Examination of child development theories (conception through elementary years) within different domains that affect children's development and learning including, physical, cognitive, linguistic, social, and emotional. Emphasis on multicultural theoretical perspectives of child development addressing culturally and linguistically diverse populations and children with atypical patterns of development. Field experience required. (Formerly ECE 2103. Credit cannot be earned for both ECE 3143 and ECE 2103.).

ECE 3313. Play, Creativity, and Learning. (3-0) 3 Credit Hours.

Concurrent enrollment in ECE 3143 and ECE 3603 is required. A study of play theories as they relate to creativity, development, and learning. Will provide early childhood and elementary educators with knowledge and skills necessary to promote and guide children's play as a fundamental learning mechanism within culturally, linguistically, and cognitively diverse classrooms. Emphasis on effective strategies, equipment, materials, and activities that support and encourage children's play and creativity at the early childhood and elementary grades. Field experience required.

ECE 3603. Language and Literacy Acquisition. (3-0) 3 Credit Hours.

Concurrent enrollment in ECE 3143 and ECE 3313 is required. Exploration of theories of language and literacy development in young children with implications for acquisition of language and early literacy concepts for all children. Explores ways that educators can enhance language and literacy development and introduces appropriate, research-based approaches to teach early reading and writing in diverse classroom settings. Field experience required. (Formerly titled "Language and Cognitive Development in EC-4.").

ECE 4103. Guidance of Young Children in Groups. (3-0) 3 Credit Hours.

Study of effective strategies for guiding the social-emotional development and learning of children, including those with special needs, in group settings. Emphasis on classroom management and discipline methods; understanding human interactions and the cultural dynamics of groups; and guiding children in task involvement. Examination of strategies for facilitating cooperative activities and use of materials; the design of effective learning environments; conflict resolution techniques, and strategies for enhancing the inclusion of children with special needs in social and learning contexts. Field experience required.

ECE 4123. Family and Community Resources in Early Childhood. (3-0) 3 Credit Hours.

Study of approaches to family, community, societal, cultural, and ideological support systems in children's growth, learning, and development. Emphasis on how these factors are related in the permissive-restrictive dimensions of child rearing and socialization in broad perspectives across environmental contexts. Examination of resources and systems to address the special needs of families with children who are "at risk" or have disabilities. Review of technological tools used to locate and compile information on community resources. Field experience required.

ECE 4143. Principles and Practices of Differentiated Education EC-6. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, completion of C&I 4353, C&I 4403, ECE 4203, and RDG 3823. Concurrent enrollment in C&I 4303 and RDG 4833 is required. May not be taken concurrently with C&I 4353, C&I 4403, ECE 4203, and RDG 3823. This course addresses the exploration of culturally responsive instruction for diverse groups of learners with a broad range of abilities, interests, and backgrounds. Identification of theoretical perspectives and principles for differentiated education in early childhood and elementary settings will be explored. Emphasis is on the development of effective instructional planning, supportive learning environments, and flexible teaching practices that accommodate individual needs within group settings. Restricted course; advisor code required for registration. Field experience required.

ECE 4153. Culturally Appropriate Assessment for Infants and Young Children. (3-0) 3 Credit Hours.

Selecting and employing culturally fair assessment and evaluation techniques that are reliable, valid, and developmentally appropriate for infants and young children. Includes the examination of strategies such as developmental checklists, parent interviews, play-based, portfolios, and informal observations for conducting assessment. Using assessment outcomes appropriately for instructional and curricular planning.

ECE 4203. Assessment and Evaluation in EC-6. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, completion of ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4353, C&I 4403, and RDG 3823. Principles of designing and using assessment and evaluation techniques that are culturally fair, intellectually sound, reliable, dependable, and content-valid for children in EC-grade 6. Emphasis on differentiation among criterion-referenced, norm-referenced, individual, informal, authentic, and group assessments. Review of learning theories and strategies for using assessment data to inform instructional planning, and matching assessment techniques to individual children and learning situations. Restricted course; advisor code required for registration. Field experience required.

ECE 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

Economics (ECO)

Economics (ECO) Courses

ECO 2003. Economic Principles and Issues. (3-0) 3 Credit Hours. (TCCN = ECON 1301)

A nontechnical introduction to economic concepts such as scarcity, costs and benefits, supply and demand, trade, employment, and growth, with applications to current economic issues and policies. May not be counted toward a major in economics, but may be counted as a free elective for College of Business students. May be applied toward the core curriculum requirement in Social and Behavioral Sciences. (Formerly titled "Introduction to Political Economy.").

ECO 2013. Introductory Macroeconomics. (3-0) 3 Credit Hours. (TCCN = ECON 2301)

Prerequisite: Placement into a college-level mathematics course. Economic analysis at the national level, including the determination of aggregate income and employment, operation of the domestic and international monetary systems, short-term income fluctuations, and long-term economic growth. May be applied toward the core curriculum requirement in Social and Behavioral Sciences.

ECO 2023. Introductory Microeconomics. (3-0) 3 Credit Hours. (TCCN = ECON 2302)

Prerequisite: Placement into a college-level mathematics course. An introduction to the economic theory of decision making by consumers and business firms; an analysis of the domestic and international market systems and their roles in allocating goods and services; and problems of market failure. May be applied toward the core curriculum requirement in Social and Behavioral Sciences.

ECO 3013. Intermediate Microeconomics. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1033, or their equivalents, with a grade of "C-" or better. The study of price determination in and the welfare implications of various market structures through the development of the preference theory of consumer behavior and the profit maximization theory of producer behavior. The role and welfare impact of externalities and of government intervention are also examined. (Formerly titled "Theory of Price.").

ECO 3033. Economics of Managerial Decisions. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1033, or their equivalents, with a grade of "C-" or better. Managerial economic decisions in firms and related entities. Topics include demand analysis, least-cost production, profit strategy, the influence of various market structures on the firm, advanced issues in pricing, and the impact of the international sector.

ECO 3053. Intermediate Macroeconomics. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 2013 and ECO 2023, or their equivalents, with a grade of "C-" or better. Analysis of the measurement, determination, and control of aggregate economic activity such as national income, output, employment, interest rates, the price level, and exchange rates. The roles of monetary and fiscal policy and their relation to income and employment, short-term income fluctuations, and long-term growth are also explored. (Formerly titled "Aggregate Economics").

ECO 3113. Introduction to Mathematical Economics. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1033, or their equivalents, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Systematic approach to economic analysis using basic mathematical tools; treatment of optimizing behavior with applications to consumer and business firms; emphasis on understanding and application of analytical techniques.

ECO 3123. Introduction to Econometrics and Business Forecasting. (3-0) 3 Credit Hours.

Prerequisites: Completion of MAT 1033, and STA 1053 or MS 1023, or their equivalents, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Measurement in economics and business that strives to mix the development of technique with its application to economic analysis. Major topics include the nature of economic and business data, specific forms of modeling and forecasting, and the use of microcomputer programs in econometric modeling and forecasting.

ECO 3163. Evolution of Economic Thought. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Development of economic theories, models, and schools of thought from the birth of market economies to the present, with an emphasis on the historical, institutional, and social forces shaping economic thinking and public policy.

ECO 3183. Economic History of the United States. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. The growth and development of the American economy from colonial times to the present; emphasis on applying a variety of economic concepts to a topical study of the economic forces that shaped the country's history.

ECO 3193. International Economics. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Principles of international trade; significance of geographic, economic, social, and political influences; current problems in international trade and payments; tariffs and commercial policy; and the role of international organizations. (Formerly titled "The International Economy.").

ECO 3213. Economics of Antitrust and Regulation. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Theory and practice of governmental regulation, deregulation, and privatization; economic, legal, and ethical concerns regarding private-sector output; and pricing as influenced by public policy and marketing structure.

ECO 3253. Economics of Public and Social Issues. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. A seminar on applying economic reasoning and models to a wide variety of public, ethical, and social issues. Uses advanced techniques in political economy.

ECO 3263. Industrial Organization. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2023, or the equivalent, with a grade of "C-" or better. Theory and empirical evidence relating to the structure of American industry and its effect on the firm's conduct and performance, government policy, and regulation.

ECO 3273. Introduction to Public Sector Economics. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2023, or the equivalent, with a grade of "C-" or better. Role of government in the marketplace; cost-benefit analysis; spending and regulatory alternatives; efficiency and equity analysis of taxes; incentives within government; and public policy issues.

ECO 3283. Labor Economics. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Theories of wages and employment determination; U.S. labor history, comparative labor movements, and contemporary labor problems.

ECO 4273. Environmental and Resource Economics. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2023, or the equivalent, with a grade of "C-" or better. Economic principles applied to natural resource and environmental problems; relationship of market and nonmarket forces to environmental quality and demands for natural resources; and development of tools for policy analysis.

ECO 4303. Economics of Developing Countries. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Specific economic problems of developing countries and national groupings; basic approaches to economic development; major proposals for accelerating development; role of planning; and trade, aid, and economic integration. (Formerly titled "Economic Problems of Developing Countries.")

ECO 4543. Economics of School System Reform. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Nontechnical applications of basic economic principles to issues facing school systems at the primary and secondary levels worldwide; including background on the evolution of current systems, analysis of critical policy issues such as inefficiencies and inequities; examination of scholars' and policymakers' proposals for transformative reform; and consideration of opportunities for research on the issues.

ECO 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 COB grade point average, permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College of Business. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ECO 4933. Internship in Economics. (0-0) 3 Credit Hours.

Prerequisites: 12 semester credit hours of upper-division economics, a 2.5 UTSA grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. This opportunity for work experience in research or applied economics may be undertaken either in private business or a public agency; opportunities are developed in consultation with the faculty advisor and Department Chair and require approval of both. This course will not count as a required economics course. Internships may be repeated (a total of 6 semester credit hours) provided the internships are with different organizations.

ECO 4951. Special Studies in Economics. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor, Department Chair, and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ECO 4953. Special Studies in Economics. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor, Department Chair, and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ECO 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: Enrollment limited to students applying for Honors in Economics. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Education (EDU)

Education (EDU) Courses

EDU 2103. Social Foundations for Education in a Diverse U.S. Society. (3-0) 3 Credit Hours.

Prerequisites: Sophomore standing and passing scores on all three sections of a Texas Success Initiative (TSI) approved assessment instrument. Students will explore the relationship between school and a diverse U.S. society. They will explore the need for an educational philosophy suited for educating a diverse population; the role of ethnicity, gender, and class in the historical construction of schooling as it is today, the interactive effects of culture and economics upon and within schools, and the politics of education. Students will explore the interconnections of the above issues.

EDU 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

EDU 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

EDU 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

EDU 4953. Special Studies in Education. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Educational Leadership (EDL)

Educational Leadership (EDL) Courses

EDL 3003. Introduction to Leadership. (3-0) 3 Credit Hours.

This seminar course begins with the premise that everyone has unique and powerful potential as a leader, and that we can learn leadership and enhance our abilities as leaders through a focused inquiry that connects theory, experience and reflection. Students will identify and further develop a personal foundation of knowledge, skills and attitudes related to leadership. Thoughtful effort will yield worthwhile and serviceable resources that will be of substantive value, enhancing the individual's effectiveness in future. This course is designed to meet students where they are coming from, starting from what they know, value and do as leaders, and then move students forward by challenging their perspectives and assumptions and supporting their development as an engaged, ethical leaders who make a positive difference by empowering others. Approaches to teaching and learning will include the following: Abstract conceptualization via lectures, writing and visual assignments; Active experimentation via case studies and projects; Concrete experiences in the form of readings and experiential activities; and, Reflective observations via discussion and journaling.

EDL 4953. Special Studies in Educational Leadership. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Educational Psychology (EDP)

Educational Psychology (EDP) Courses

EDP 2113. Development in the Elementary and Middle School Child. (3-0) 3 Credit Hours.

Prerequisite: Sophomore standing. An introduction to the cognitive, psychosocial, sociocultural, psychoanalytic and moral theories of development from birth through adolescence. Topics also include atypical development, exceptionality, and learning challenges. Emphasis is on applications at the elementary school level.

EDP 3133. Learning and Development in the Early Elementary Context EC-6. (3-0) 3 Credit Hours.

Prerequisite: Sophomore standing. An introduction to major theories of learning and development, with an emphasis on applications at the elementary level. Topics include individual and group differences, motivation, and elementary-level classroom management.

EDP 3203. Learning and Development in the Secondary School Adolescent. (3-0) 3 Credit Hours.

Prerequisites: Sophomore standing and satisfaction of the Texas Success Initiative (TSI) requirement. An introduction to major theories of learning and development, with an emphasis on applications at the secondary level. Topics include individual and group differences, motivation, and secondary-level classroom management.

EDP 3303. Learning and Development in the Middle School Context (Grades 4-8). (3-0) 3 Credit Hours.

Prerequisites: Sophomore standing and satisfaction of the Texas Success Initiative (TSI) requirement. An introduction to the major theories of learning and development, with an emphasis on applications to the middle school level (grades 4-8). Topics include child and adolescent development, individual and group-level differences, student motivation, and classroom management.

EDP 4203. Assessment and Evaluation. (3-0) 3 Credit Hours.

Prerequisites: Completion of all requirements for admission to the Teacher Certification Program, including but not limited to satisfaction of the Texas Success Initiative (TSI) requirement, and completion of EDU 2103 and EDP 3203 or EDP 3303. This course will discuss the principles and techniques necessary to develop sound assessment strategies. The primary focus of the course will be on the creation of test items, administration of classroom evaluation procedures, and the roles of testing, measurement, and evaluation in daily classroom practice. The use and interpretation of standardized tests, alternative assessments, and norm- and criterion-referenced assessments will also be discussed as well as theoretical and ethical issues related to testing and evaluation. Restricted course; advisor code required for registration.

EDP 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

EDP 4953. Special Studies in Educational Psychology. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

EDP 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: Enrollment limited to Honors College students during the last two semesters with sponsorship by a department faculty member. Supervised research and preparation for an honors thesis. May be repeated once with advisor's approval.

Electrical Engineering (EE)

Electrical Engineering (EE) Courses

EE 1322. Introduction to Electrical and Computer Engineering. (2-1) 2 Credit Hours. (TCCN = ENGR 1201)

Prerequisite: MAT 1073. An introduction to the electrical and computer engineering profession with emphasis on technical communication, team-based engineering design, professional and ethical responsibilities, contemporary issues, and software tools. One hour of recitation session per week. (Formerly EE 1323. Credit cannot be earned for both EE 1323 and EE 1322.)

EE 2213. Electric Circuits and Electronics. (3-0) 3 Credit Hours. (TCCN = ENGR 2305)

Prerequisite: PHY 1963. Corequisite: EGR 2323. Principles of electrical circuits and systems. Basic circuit elements (resistance, inductance, mutual inductance, capacitance, independent and dependent controlled voltage, and current sources). Topology of electrical networks; Kirchhoff's laws; node and mesh analysis; DC circuit analysis; operational amplifiers; transient and sinusoidal steady-state analysis; AC circuit analysis; first- and second-order circuits; application of Laplace transforms to the analysis of RLC circuits. (Formerly EE 2214. Credit cannot be earned for both EE 2213 and EE 2214.)

EE 2423. Network Theory. (3-1) 3 Credit Hours.

Prerequisites: EE 1322 and completion of or concurrent enrollment in EGR 2323 and PHY 1963. Basic network principles; simple resistive circuits; steady state responses to DC and AC signals; node-voltage and mesh-current analysis; source transformations and superposition; Thevenin and Norton equivalents; natural and step transient responses of first and second order circuits; Laplace transform in circuit analysis; and use of SPICE to solve network problems. One hour of problem solving recitation per week.

EE 2511. Logic Design Laboratory. (1-2) 1 Credit Hour.

Prerequisite: Completion of or concurrent enrollment in EE 2513. Introduction to digital design techniques. Implementation of basic digital logic and hardware; combinational circuits, flip-flops, registers, sequential circuits and state-machines.

EE 2513. Logic Design. (3-1) 3 Credit Hours.

Prerequisites: EE 1322 and completion of or concurrent enrollment in CS 2073. Number systems, Boolean algebra, combinational and sequential circuit design; and minimization and implementation. One hour of problem solving recitation per week.

EE 3113. Electrical and Computer Engineering Laboratory I. (1-6) 3 Credit Hours.

Prerequisites: EE 2423, EE 2513, and completion of or concurrent enrollment in EE 3313. Introduction to basic measurement equipment and techniques; use of circuit simulation tools; comparison to empirical performance of simple circuits using discrete devices and circuits; simple subsystem circuit design; introduction to automated data acquisition; and laboratory technical communication.

EE 3213. Electromagnetic Engineering. (3-1) 3 Credit Hours.

Prerequisites: EGR 3323 and PHY 1963. Review of vector calculus, electrostatics, magnetostatics, electrodynamics, electromagnetic waves, dielectrics, boundary conditions, and RLC circuits. Selected other topics include wave guides, anisotropic crystal optics, transmission lines, fiber optics, reflection and refraction, and special relativity. One hour of problem solving recitation per week.

EE 3223. C++ and Data Structures. (3-1) 3 Credit Hours.

Prerequisite: EE 3463. Review of C++ non-OOP concepts, object-oriented programming, inheritance, virtual functions and polymorphism, and operator overloading. In-depth study of data structures including stacks, queues, linked lists, trees, binary trees and its application to binary search trees and sorting. One hour of problem solving recitation per week.

EE 3313. Electronic Circuits I. (3-1) 3 Credit Hours.

Prerequisites: EE 2423 and PHY 1963. P-N junctions; diode circuits; BJTs and FETs; application to digital and analog circuits; and use of SPICE to solve simple circuits. One hour of problem solving recitation per week.

EE 3323. Electronic Devices. (3-0) 3 Credit Hours.

Prerequisites: CHE 1103 and EE 2423. Introduction to semiconductor materials, fundamentals of quantum mechanics and carrier phenomena, operating principles of P-N junction diodes, metal-semiconductor contacts (Schottky diodes), bipolar-junction transistors, field-effect transistors, photodetectors and optoelectronic devices.

EE 3413. Analysis and Design of Control Systems. (3-1) 3 Credit Hours.

Prerequisites: EGR 2213 and EGR 2323 for electrical engineering majors (EGR 2513 and EE 2213 for mechanical engineering majors). Modeling, analysis, and design of linear automatic control systems; time and frequency domain techniques; stability analysis, state variable techniques, and other topics. Control systems analysis and design software will be used. One hour of problem solving recitation per week.

EE 3424. Mathematics in Signals and Systems. (4-1) 4 Credit Hours.

Prerequisites: EE 2423 and EGR 2323. Basic concepts, mathematical representation of signals and systems, graphs of functions, elements of complex numbers, partial fraction expansion, properties of basic functions, including sinusoidal and complex exponential signals, phasors, time and amplitude transformations of signals, properties of signals and classification of systems, Dirac delta function, step function, convolution integral, impulse response, frequency response function for linear time invariant systems, differential-equation models, response to real sinusoidal signals, ideal filters, periodic functions and Fourier series, continuous-time Fourier transform, energy and power spectral density functions, Laplace transforms in linear system analysis, differential equations with constant coefficients, transfer functions and state-variable models. One hour of problem solving recitation per week. (Formerly EE 3423. Credit cannot be earned for both EE 3424 and EE 3423.)

EE 3463. Microcomputer Systems I. (3-1) 3 Credit Hours.

Prerequisites: EE 2513 and CS 2073. Introduction to assembly- and C-language programming; architecture, peripherals, operating system interfacing principles, and development tools; and software documentation techniques. One hour of recitation per week.

EE 3513. Electromechanical Systems. (3-0) 3 Credit Hours.

Prerequisite: EGR 2213. Principles of electromechanical energy conversion; polyphase circuits; dynamic analysis and simulation of energy-transfer devices; and power devices.

EE 3523. Discrete Signals and Systems. (3-0) 3 Credit Hours.

Prerequisite: EE 3424. Time and frequency characteristics of signals and systems, sampling, discrete-time convolution, and applications of discrete-time Fourier and Z-transforms to systems. MATLAB exercises. (Formerly titled "Signals and Systems II.")

EE 3533. Random Signals and Noise. (3-0) 3 Credit Hours.

Prerequisites: EE 3424 and EGR 2323. Probability and random variables, conditional distribution, conditional density function; operations on random variables; Central Limit Theorem; random process; spectral analysis of random processes; and linear systems with random inputs.

EE 3563. Digital Systems Design. (2-3) 3 Credit Hours.

Prerequisites: EE 2511 and EE 2513. Introduction to switching theory; design of complex combinational and sequential circuits; analysis of hazards and fault detection, location, and tolerance; and design and verification of complex circuitry using schematic entry, functional modeling, and mixed-mode simulation.

EE 4113. Electrical and Computer Engineering Laboratory II. (1-6) 3 Credit Hours.

Prerequisites: EE 3113, and completion of or concurrent enrollment in either EE 3563 for computer engineering majors or EE 4313 for electrical engineering majors. Complex electronic circuit subsystem design, improving measurement system performance, impact of circuit parasitics, signal integrity, electromagnetic interference, thermal analysis, printed circuit board layout, and technical communication.

EE 4123. Power Engineering Laboratory. (1-4) 3 Credit Hours.

Prerequisites: EE 3113, completion of or concurrent enrollment in EE 4753 and EE 4763. Power Electronics Laboratory to analyze and test DC-DC converters, voltage mode and current mode control. Power Systems Simulation Laboratory to analyze and design power systems that include power flow, transmission line, transient and fault analysis.

EE 4243. Computer Organization and Architecture. (2-3) 3 Credit Hours.

Prerequisite: EE 3463. Design of advanced state machines and computer systems, and processor design using computer-assisted design and analysis tools.

EE 4313. Electronic Circuits II. (3-0) 3 Credit Hours.

Prerequisites: EE 3313 and EE 3323. Multiple transistor circuits; feedback and frequency response analysis; operational amplifier analysis and design; and introduction to integrated circuit design and analysis. Design of analog and digital circuits; and use of SPICE to analyze complex circuits.

EE 4323. Dielectric and Optoelectronic Engineering Laboratory. (2-4) 3 Credit Hours.

Prerequisites: EE 3213, completion of or concurrent enrollment in EE 3323 for Topic 1. Principles of dielectric devices and optical components and systems. May be repeated for credit when topics vary. Topic 1: Capacitance, resistance, and inductance device evaluations, impedance frequency and temperature spectrum analysis, characterization of tunable dielectric microwave materials, electromechanical coupling of piezoelectric devices. Topic 2: Lasers, photo-detectors, phase locked interferometer, electro-optical and nonlinear optic devices, optical image processing, Fourier optics, holographic recording, and photorefractive storage.

EE 4443. Discrete-Time and Computer-Controlled Systems. (3-0) 3 Credit Hours.

Prerequisites: EE 3413 and completion of or concurrent enrollment in EE 3523. Sampled-data techniques applied to the analysis and design of digital control systems; stability criteria; compensation; and other topics.

EE 4453. Selected Topics in Digital Signal Processing. (3-0) 3 Credit Hours.

Prerequisite: EE 4643. Theoretical basis for signal processing and applications. Topics include modeling of biological systems; signal processing in computer security; data and image encryption; digital image compression; pattern recognition; biomedical signal and image processing; signal processing for system biology; genomic signal processing and statistics; speech and audio signal processing; multimedia signal processing. May be repeated for credit when topics vary. (Formerly titled "Principles of Bioengineering and Bioinstrumentation.")

EE 4513. Introduction to VLSI Design. (2-3) 3 Credit Hours.

Prerequisites: EE 3323 and EE 3463. Design of integrated digital systems; logic simulation, standard cell libraries, circuit simulation, and other computer-aided design tools; and integrated circuit processing and device modeling.

EE 4523. Introduction to Micro and Nanotechnology. (2-3) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in EE 3323. Survey of microfabrication techniques, scaling laws, mechanical, optical and thermal transducers, microfluidic applications, nanostructures. (Credit cannot be earned for both EE 4523 and PHY 4653.)

EE 4543. Advanced Topics in Micro and Nanotechnology. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in EE 3323. Topics to be selected from advanced sensors, actuators, engineered materials, device physics, microwave applications of MEMS structures, photonics, microelectronic devices, analog IC design, mixed-signal circuits and systems. May be repeated for credit when topics vary.

EE 4553. VLSI Testing. (2-3) 3 Credit Hours.

Prerequisite: EE 3463. Faults modeling and simulation; stuck at faults, bridging faults, and functional testing; self-testing concepts; standard and test patterns; device and system testing; and design for testability.

EE 4563. FPGA-Based System Design. (3-0) 3 Credit Hours.

Prerequisites: EE 3463 and EE 3563. FPGAs replace digital circuits in most applications. This course addresses underlying theory and applications: Introduction to Field Programmable Gate Arrays; General-Purpose FPGA Architecture; Reconfigurable Computing Devices and Systems; Hardware Description Language for FPGAs; synthesizing FPGA interconnections; Global Timing Constraints; evaluating and optimizing problems for FPGA implementations; Arithmetic, Precision Analysis & Floating Point; FPGA vs. CPU partitioning.

EE 4583. Microcomputer Systems II. (2-3) 3 Credit Hours.

Prerequisite: EE 3463. Advanced microprocessor-based system design; high-speed bus interfacing, coprocessors, and other specialized input/output devices; and high-level languages and software performance analysis.

EE 4593. Embedded System Design. (3-0) 3 Credit Hours.

Prerequisites: EE 3463 and EE 3563. The goal of this course is to develop a comprehensive understanding of the technologies behind embedded systems, particularly, those using computing elements: Embedded processor selection, hardware/firmware partitioning, circuit layout, circuit debugging, development tools, firmware architecture, firmware design, and firmware debugging. C programming of embedded microcontrollers, the function and use of common peripherals, and the programming and simulation (using VHDL/Verilog) of custom single-purpose processors.

EE 4613. Communication Systems. (3-0) 3 Credit Hours.

Prerequisites: EE 3424 and EE 3533 or STA 3533. Basic theory and principles of modern analog and digital communication systems; signal and noise analysis, signal-to-noise ratio, and circuit implementations.

EE 4623. Digital Filtering. (3-0) 3 Credit Hours.

Prerequisite: EE 3424 and completion of or concurrent enrollment in EE 3463. Design and implementation of FIR and IIR filters, hardware, and software; and topics from adaptive filtering, neural networks. MATLAB exercises.

EE 4643. Digital Signal Processing. (3-0) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in EE 3523, and EE 3533 or STA 3533. Transform techniques for discrete signal processing; discrete representation and analysis of digital filters and other topics; and A/D and D/A conversion and associated filtering techniques.

EE 4653. Digital Communications. (3-0) 3 Credit Hours.

Prerequisites: EE 3424 and STA 3533 or EE 3533. Basic digital modulation schemes: ASK, BPSK, QPSK, FSK, and QAM modulation, binary signal detection, matched filtering, bit error rate, intersymbol interference, equalization, signal-space methods, optimum receiver, fundamentals of information theory and block coding, convolutional coding and spread spectrum.

EE 4663. Digital Image Processing. (3-0) 3 Credit Hours.

Prerequisite: EE 3523. Fundamentals and some practical applications of digital image processing. Topics include image formation, sampling, and quantization; image motion and detector noise; feature extraction; image enhancement and restoration by spatial filtering and maximum entropy; image coding for bandwidth compression by DPCM; transform coding, subband coding; and use of MATLAB for image processing.

EE 4673. Data Communication and Networks. (2-3) 3 Credit Hours.

Prerequisites: EE 3223 and completion of or concurrent enrollment in EE 4613. Introduction to data communication networks, electrical interface, data transmission, WAN and LAN network overview, transmission devices, transmission errors and methods of correction, and protocols.

EE 4683. Wireless Communications. (3-0) 3 Credit Hours.

Prerequisite: EE 3424, EE 3533 or STA 3533. Common wireless systems and standards. Cellular radio concepts: frequency reuse and handoff strategies. Large-scale path loss models. Small-scale fading and multipath. Modulation techniques for mobile radio: performances in fading and multipath channels. Multiple access techniques. RF hardware realization issues.

EE 4693. Fiber Optic Communications. (3-0) 3 Credit Hours.

Prerequisites: EE 3313, EE 3424, and completion of or concurrent enrollment in EE 3213. Light propagation using ray and electromagnetic mode theories, dielectric slab waveguides, optical fibers, attenuation and dispersion in optical fibers, optical fiber transmitters and receivers, electro-optical devices, and optical fiber measurement techniques.

EE 4723. Intelligent Robotics. (3-1) 3 Credit Hours.

Prerequisite: EE 3413 or ME 3543. Coordinate transformations, forward and inverse kinematics, Jacobian and static forces, path planning techniques, dynamics, design, analysis and control of robots, sensing and intelligence. (Formerly EGR 4723 and ME 4713. Credit cannot be earned for both EE 4723 and either EGR 4723 or ME 4713.)

EE 4733. Intelligent Control. (3-0) 3 Credit Hours.

Prerequisite: EE 3413. Neural networks and fuzzy logic basics, approximation properties, conventional adaptive controller design and analysis, intelligent controller design and analysis techniques for nonlinear systems, and closed-loop stability.

EE 4743. Embedded Control Systems. (2-3) 3 Credit Hours.

Prerequisites: EE 3413 and EE 3463. Embedded system principles and control system concepts, programming, tools and their applications, embedded controls design, and analysis of industrial processes.

EE 4753. Analysis of Power Systems. (3-0) 3 Credit Hours.

Prerequisite: EE 3413. Electric energy and environment, principles of power generation, transmission and distribution, power flow analysis, faults and transient stability analysis, power systems control and renewable energy systems.

EE 4763. Power Electronics. (3-0) 3 Credit Hours.

Prerequisites: EE 3113 and EE 3413. Switch-mode power conversion, analysis and control of DC-DC converters, DC-AC inverters for motor drives and to interface renewable energy sources with utility, AC-DC rectifiers, applications in sustainable energy systems, introduction to power semiconductor devices and magnetic components.

EE 4773. Electric Drives. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in EE 3513. Analysis of electric machines in combination with power electronics; torque, speed and position control; space vectors, motor drive inverter; vector control; wind energy conversion.

EE 4811. Electrical and Computer Engineering Design I. (1-1) 1 Credit Hour.

Prerequisites: EE 4313 for Electrical Engineering majors or EE 3563 for Computer Engineering majors, and completion of or concurrent enrollment in EE 4113. Business planning and project management in engineering design; discussion of ethical and social issues in design; and selection of a design project, development of a detailed design proposal, and approval of a design project.

EE 4813. Electrical and Computer Engineering Design II. (2-3) 3 Credit Hours.

Prerequisites: EE 4113 and EE 4811. Complex system design; advanced ATE; project management, proposals, status reporting, formal oral and written technical reports, and business plans; open-ended design project considering safety, reliability, environmental, economic, and other constraints; and ethical and social impacts.

EE 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

EE 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

EE 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

EE 4953. Special Studies in Electrical and Computer Engineering. (3-0) 3 Credit Hours.

Prerequisites vary with the topic (refer to the course syllabus on Bluebook or contact the instructor). An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Engineering (EGR)

Engineering (EGR) Courses

EGR 1313. Calculus with Engineering Applications. (3-2) 3 Credit Hours.

Prerequisite: Completion of precalculus or satisfactory performance on a placement examination. The first of a two-part integrated physics and calculus course. Calculus topics include an introduction to the concepts of limit, continuity, and derivative, mean value theorem, and applications of derivatives such as velocity and acceleration; introduction to the Riemann integral and the fundamental theorem of calculus. Physics topics include an introduction to vectors, force and Newton's Laws of Physics. Classes meet weekly for three hours of lecture and two hours of problem solving tutorials.

EGR 1323. Physics with Engineering Applications. (3-2) 3 Credit Hours.

Prerequisite: EGR 1313. The second of a two-part integrated physics and calculus course. Calculus topics include applications of derivatives to maximization and curve sketching, evaluation of definite and indefinite integrals and an introduction to differential equations. Physics topics include applications of Newton's Laws and the concepts of momentum, energy, work and power. Classes meet weekly for three hours of lecture and two hours of problem solving tutorials.

EGR 1343. The Impact of Modern Technologies on Society. (3-0) 3 Credit Hours.

Prerequisites: Basic background in high school mathematics and physical sciences. This course is designed to inform students of the social impact of modern technologies. The course explores the issues faced by society as technology becomes an integral part of human life. The course prepares students to think critically, practically, creatively and responsively about technological and sociological challenges, and encourages them to examine solutions of their own. The course also explores and discusses the socio-technological interplay. May be applied toward the core curriculum requirement in Social and Behavioral Sciences.

EGR 1403. Technical Communication. (3-0) 3 Credit Hours.

Prerequisite: WRC 1013. Oral, written, graphical and visual communication; technical instructions; design project with presentation; team-work; and personal responsibility. May be applied toward the Core Curriculum requirement in the Component Area Option.

EGR 2103. Statics. (3-0) 3 Credit Hours. (TCCN = ENGR 2301)

Prerequisites: MAT 1224 and PHY 1943. Vector analysis of force systems applied to particles and rigid bodies and free body diagrams. Engineering applications of equilibrium; of moments, internal forces, and friction; and of centroids, centers of gravity, and moments of inertia.

EGR 2213. Statics and Dynamics. (3-0) 3 Credit Hours. (TCCN = ENGR 2303)

Prerequisites: MAT 1224 and PHY 1943. Force, moment, equilibrium, centroids and moments of inertia, kinematics, and kinetics of particles. Not open to students in Civil or Mechanical Engineering. May not be substituted for EGR 2103.

EGR 2323. Applied Engineering Analysis I. (3-1) 3 Credit Hours. (TCCN = MATH 2321)

Prerequisite: MAT 1224. Application of mathematical principles to the analysis of engineering problems using linear algebra and ordinary differential equations (ODE's). Use of software tools. Topics include: mathematical modeling of engineering problems; separable ODE's; first-, second-, and higher-order linear constant coefficient ODE's; characteristic equation of an ODE; systems of coupled first-order ODE's; matrix addition and multiplication; solution of a linear system of equations via Gauss elimination and Cramer's rule; rank, determinant, and inverse of a matrix; eigenvalues and eigenvectors; solution of an ODE via Laplace transform; numerical solution of ODE's. One hour of problem solving recitation.

EGR 2513. Dynamics. (3-0) 3 Credit Hours. (TCCN = ENGR 2302)

Prerequisite: EGR 2103. Kinetics of particles and plane rigid bodies, work and energy, impulse and momentum, equations of motion and engineering applications.

EGR 3303. Engineering Co-op. (0-0) 3 Credit Hours.

Prerequisite: Acceptance into the Cooperative Education in Engineering Program. Designed for students participating in Cooperative Education in Engineering Program. Problems related to students' work assignments during their work for co-op employers. No more than 3 semester credit hours of Engineering Co-op may apply to a bachelor's degree. To apply 3 semester credit hours of Engineering Co-op as a technical elective toward a degree in engineering, a student must petition and get approval of a faculty advisor prior to co-op activities. The grade report for the course is either "CR" (satisfactory performance) or "NC" (unsatisfactory performance). Formerly EGR 3301.

EGR 3323. Applied Engineering Analysis II. (3-1) 3 Credit Hours.

Prerequisite: EGR 2323. Application of mathematical principles to the analysis of engineering problems using vector differential and integral calculus, partial differential equations, and Fourier series; complex variables; discrete mathematics; and use of software tools. One hour of problem solving recitation.

EGR 3713. Engineering Economic Analysis. (3-0) 3 Credit Hours.

Prerequisites: ECO 2013 or ECO 2023, and MAT 1224. Time-value of money concepts; techniques for economic evaluation of engineering alternatives; depreciation and taxes; inflation and market rates; contracting practices; funding public projects and related public policy issues.

EGR 4953. Special Studies in Engineering. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

EGR 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisite: Enrollment limited to candidates for college honors during their last two semesters; approval by the College Honors Committee. Supervised research and preparation of an honors thesis. May be repeated once with approval.

English (ENG)

English (ENG) Courses

ENG 1113. Introduction to Creative Literary Arts. (3-0) 3 Credit Hours.

Introduction to Creative Literary Arts exploration in the purposes and processes of the literary arts. This course provides opportunities for students to engage in creative literary practices through the study of literary genres such as poetry and fiction. May be applied toward the Core Curriculum requirement in Creative Arts.

ENG 2013. Introduction to Literature. (3-0) 3 Credit Hours. (TCCN = ENGL 2341)

Prerequisite: Completion of the Core Curriculum requirement in Communication. Introductory study of great works of literature with an emphasis on novels, plays, and poetry by British and American authors. Designed for nonmajors. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

ENG 2213. Literary Criticism and Analysis. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. A study of poetry, fiction, and drama, with close attention to literary terms, literary criticism, and the characteristics of each genre. This course includes intensive reading and extensive writing requirements and is designed to prepare students who intend to take advanced courses in literature and other students who have a commitment to the rigorous study of literature. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

ENG 2223. British Literature I. (3-0) 3 Credit Hours. (TCCN = ENGL 2322)

Prerequisite: Completion of the Core Curriculum requirement in Communication. Study of representative works of British literature from the medieval period to 1700. Required of students majoring in English.

ENG 2233. British Literature II. (3-0) 3 Credit Hours. (TCCN = ENGL 2323)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Study of representative works of British literature from 1700 to the present. Required of students majoring in English.

ENG 2263. American Literature I. (3-0) 3 Credit Hours. (TCCN = ENGL 2327)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Study of representative works of American literature from the pre-Colonial period to 1865. Required of students majoring in English.

ENG 2293. American Literature II. (3-0) 3 Credit Hours. (TCCN = ENGL 2328)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Study of representative works of American literature from 1865 to the present. Required of students majoring in English.

ENG 2323. Creative Writing: Fiction. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Offers the opportunity for intensive practice and development of techniques in the writing of fiction.

ENG 2333. Creative Writing: Poetry. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Offers the opportunity for intensive practice and development of techniques in the writing of poetry.

ENG 2343. Creative Writing: Nonfiction. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Offers the opportunity for intensive practice and development of techniques in the writing of nonfiction genres such as memoir, autobiography, and informal essays.

ENG 2383. Multiethnic Literatures of the United States. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. A survey of the literature of various minority groups such as Native American, Asian American, African American, and Latina/o. Designed for nonmajors. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

ENG 2413. Technical Writing. (3-0) 3 Credit Hours. (TCCN = ENGL 2311)

Prerequisite: Completion of the Core Curriculum requirement in Communication. Techniques of expository writing, particularly adapted to students in technological and scientific subjects. May be applied toward the Core Curriculum requirement in the Component Area Option.

ENG 2423. Literature of Texas and the Southwest. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. Study of the literature of Texas and the Southwest, including an examination of the region's multicultural heritage. Designed for nonmajors. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

ENG 2433. Editing. (3-0) 3 Credit Hours.

Prerequisite: ENG 2413. Principles and applications of production editing and technical editing, including evaluation and revision of style, tone, and organization of documents. Practice in the use of editing symbols and copy marking. (Same as COM 2433. Credit cannot be earned for both ENG 2433 and COM 2433.)

ENG 2443. Introduction to Rhetoric. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Introduces students to key concepts and frameworks useful for analysis of texts, events, communication, and contexts by focusing on the traditional rhetorical canons of invention, arrangement, style, delivery, and memory.

ENG 3033. American Literature, 1945 to Present. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of the literature written in the United States since 1945.

ENG 3063. American Literature, 1870–1945. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of literature written in the United States in the late 19th and early 20th centuries.

ENG 3073. Young Adult Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Literary analysis of the kinds of reading available for adolescents: poetry, drama, biography, science fiction, mystery, and fantasy. Both classics and current trends will be considered. Emphasis on the novel. (Formerly ENG 2373. Credit cannot be earned for both ENG 3073 and ENG 2373.)

ENG 3113. Studies in Individual Authors. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Study of the works of an individual British or American author or of several authors examined in relation to one another. May be repeated for credit when authors vary.

ENG 3123. Modern Fiction. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical survey of American, British, and Continental fiction of the 20th century, studied in relation to the development of modern techniques.

ENG 3133. Women and Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of the presentation of women and feminist issues in various literary forms.

ENG 3153. Topics in Drama. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Study of one or more periods (e.g., Tudor-Stuart, modern, contemporary) or modes (e.g., comedy, tragedy) of drama. May be repeated for credit when topics vary.

ENG 3213. Chaucer. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of *The Canterbury Tales* and other poems. Texts in Middle English.

ENG 3223. Shakespeare: The Early Plays. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of comedies, histories, and tragedies from 1590–1601.

ENG 3233. Shakespeare: The Later Plays. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of comedies, tragedies, and romances from 1602–1613.

ENG 3243. Topics in the British Novel. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of English novels. May be repeated for credit when topics vary.

ENG 3253. The American Novel. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Reading and discussion of representative American novels.

ENG 3303. Theory and Practice of Composition. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. Extensive practice in the techniques of clear, effective writing. Designed for students who will write in their professions and will supervise the writing of others.

ENG 3313. Advanced Composition. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. Study of the principles and procedures of informational and persuasive prose. Emphasis on coherence, liveliness, persuasiveness, and originality. Extensive writing practice, including the writing of arguments.

ENG 3323. History of the English Language. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Historical survey of the development of the English language.

ENG 3333. Introduction to the Structure of English. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Analysis of English syntax from various theoretical perspectives, including traditional, structural, and generative. Consideration of the concept of Standard English and of language variation, especially regional and social variation within modern English.

ENG 3343. Principles of English Linguistics. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Introduction to the goals and procedures of modern linguistics, emphasizing phonetics, phonology, and morphology. Discussion of language acquisition and the neurolinguistic foundations of language ability. Some attention to topics such as semantics, pragmatics, and language change. (Same as ANT 3903 and LNG 3813. Credit cannot be earned for more than one of these courses.)

ENG 3363. Topics in Rhetoric and Composition. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Critical study of a topic in rhetoric and composition, such as history and development, research and methodology, major paradigms, and/or different contexts. Special emphasis on the diversity of approaches and applications. May be repeated for credit when topics vary.

ENG 3383. Writing in Public, Professional, and Workplace Contexts. (3-0) 3 Credit Hours.

Prerequisite: ENG 2413. Study of the fundamental principles, forms, and procedures of writing in a specific topic, content, and/or genre, with emphasis on research, revision, documentation, and style. May be repeated for credit when topics vary.

ENG 3393. Literary Theories. (3-0) 3 Credit Hours.

Prerequisite: ENG 2213. Critical study of the nature and function of literature and the relationship of literature to philosophy, history, and the other arts; attention to such topics as stylistics, genres, and literary history.

ENG 3413. Specialized Professional Writing. (3-0) 3 Credit Hours.

Prerequisite: ENG 2413. Writing for specialized purposes such as news releases, feature articles, reports, newsletters, speeches, scriptwriting, advertising, and professional correspondence.

ENG 3423. Topics in Creative Writing. (3-0) 3 Credit Hours.

Prerequisites: ENG 2323 or ENG 2333 or ENG 2343 and consent of instructor (writing portfolio required). Creative writing workshop in specialized area or genre other than poetry or short fiction. May be repeated for credit when topics vary.

ENG 3513. Mexican American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of literature by and about Mexican Americans, including prose, verse, drama, essays, and autobiography. Concentration on writings since 1959.

ENG 3613. African American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of literature by and about African Americans, including prose, verse, drama, essays, and autobiography.

ENG 3713. Topics in Multiethnic Literatures of the United States. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Comparative study of a specific genre or theme in the literatures of various ethnic groups in the United States such as African American, Asian American, Native American, and/or U.S. Latino/a. May be repeated for credit when topics vary.

ENG 3813. Topics in Native American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of a topic in Native American/Indigenous literatures focusing on an author, a genre, a theme, or on traditional and oral literature. May be repeated for credit when topics vary.

ENG 4013. Restoration and Eighteenth-Century Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Selected readings in the fiction, drama, poetry, and prose of the British literature of the late 17th century and the 18th century.

ENG 4023. Romantic Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Selected readings in the fiction, poetry, and prose of the British Romantic period.

ENG 4033. Literary Modes and Genres. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Intensive study of a single mode or genre such as comedy, tragedy, allegory, satire, epic, or a type of nonfiction such as biography. May be repeated for credit when topics vary.

ENG 4053. Modern British and American Poetry. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. An intensive study of major modern poets.

ENG 4063. Medieval English Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Study of the major English writings from the Anglo-Saxon and Middle English periods (excluding Chaucer), with special emphasis on Beowulf and Chaucer's contemporaries. Some works in translation, but original texts whenever possible.

ENG 4113. Renaissance Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Selected readings from major writers of the 16th and early 17th centuries (excluding Shakespeare).

ENG 4143. Victorian Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Selected readings in the fiction, poetry, and nonfiction prose of major Victorian writers.

ENG 4393. Feminist Theory of Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of feminist theory and the relationship of gender to literature. Selected readings from major feminist theorists in connection with the study of literary texts.

ENG 4423. Studies in Advanced Linguistics. (3-0) 3 Credit Hours.

Prerequisite: ENG 3343 or LNG 4013. Specialized study of one or more areas of linguistic research, including historical linguistics, sociolinguistics, dialectology, linguistics for literary analysis, or languages in contact. May be repeated for credit when topics vary.

ENG 4433. Advanced Professional Writing. (3-0) 3 Credit Hours.

Prerequisite: ENG 2413 or the equivalent. Development of complex documents such as manuals, proposals, grants, environmental impact studies, newsletters, and brochures. Extensive practice in writing, layout and design, and preparation of professional documents. May be repeated for credit when topics vary.

ENG 4523. Writer's Workshop: Advanced Fiction Writing. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor (writing portfolio required). Designed for students who have demonstrated potential as fiction writers. May be repeated for credit, but not more than 12 semester credit hours of ENG 4523 and/or ENG 4533 will apply to a bachelor's degree, and not more than 6 semester credit hours will apply toward the English major.

ENG 4533. Writer's Workshop: Advanced Poetry Writing. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor (writing portfolio required). Designed for students who have demonstrated potential as poets. May be repeated for credit, but not more than 12 semester credit hours of ENG 4533 and/or ENG 4523 will apply to a bachelor's degree, and not more than 6 semester credit hours will apply toward the English major.

ENG 4613. Topics in Mexican American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of a topic in Mexican American literature: author, genre, or theme. May be repeated for credit when topics vary.

ENG 4713. Topics in African American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of a topic in African American literature: author, genre, or theme. May be repeated for credit when topics vary.

ENG 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ENG 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ENG 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ENG 4933. Internship. (0-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Supervised experience relevant to English. May be repeated once for credit, but not more than 3 semester credit hours will apply to the English major.

ENG 4953. Special Studies in English. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ENG 4973. Seminar for English Majors. (3-0) 3 Credit Hours.

Prerequisite: 12 upper-division semester credit hours in English. This undergraduate seminar, limited to English majors in their senior year, offers the opportunity to study a genre, author, or period in English or American literature. Content varies with each instructor. May be repeated once for credit when topics vary.

ENG 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee; enrollment in or completion of ENG 4973. Supervised research and preparation of an Honors Thesis for the purpose of earning English Honors. May be repeated once with advisor approval.

English as a Second Language (ESL)

English as a Second Language (ESL) Courses

ESL 3003. Language and Schooling. (3-0) 3 Credit Hours.

Study of the principles of linguistics as they relate to language in education, particularly for bilingual and second language learners. Attention is given to linguistics approaches to development of oral language and literacy skills.

ESL 3023. Second Language Teaching and Learning in EC–6. (3-0) 3 Credit Hours.

Application of principles of second language acquisition to promote content-area learning and academic-language development for English language learning (ELL) students in Pre-K to sixth-grade classrooms. Particular attention on methods and strategies for planning, implementing and assessing effective instruction for ELL students. Field experience required.

ESL 3033. Foundations of English as a Second Language. (3-0) 3 Credit Hours.

Historical, theoretical, and policy foundations of ESL education. Application of research findings to planning and implementing effective programs for ESL students. Use and interpretation of formal and informal assessments to plan and adapt instruction for ESL students. Strategies for creating effective multicultural/multilingual learning environments. Advocating for ESL students and facilitating family and community involvement.

ESL 3053. Literacy in a Second Language. (3-0) 3 Credit Hours.

Application of theories of second language acquisition to promote ESL students' literacy development. Methods, strategies, and techniques for designing, implementing, and assessing effective reading and writing lessons for ESL students. Design and evaluation of appropriate materials for literacy instruction. Field experience required.

ESL 3063. Second Language Acquisition in Early Adolescence. (3-0) 3 Credit Hours.

Application of principles of second language acquisition to promote content-area learning and academic-language development for English language learning (ELL) students in grades 4 and higher. Particular attention is placed on methods and strategies for planning, implementing and assessing effective instruction for adolescent ELL students. Field experience required.

ESL 4003. Approaches to Second Language Teaching. (3-0) 3 Credit Hours.

Prerequisite: Completion of all requirements for admission to the Teacher Certification Program. Study of methods, instructional strategies and materials for teaching ESL students with beginning to advanced levels of proficiency. Focus on planning, implementing, and assessing developmentally appropriate ESL instruction in learner-centered classrooms. Particular focus on strategies and techniques for promoting students' communicative competence in English. Up to 20 hours of directed field experience are required.

ESL 4013. Principles of First and Second Language Acquisition. (3-0) 3 Credit Hours.

Study of first and second language acquisition. Application of this knowledge to promote students' language development in English and to promote teachers' abilities to assess language proficiencies.

ESL 4953. Special Studies in English as a Second Language. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. To apply credit earned in ESL 4953 toward a minor, consent of the academic advisor is required.

English for International Students (EIS)

English for International Students (EIS) Courses

EIS 1063. ESL for International Students: Listening. (3-0) 3 Credit Hours.

Development of listening comprehension and related note-taking skills needed in academic settings.

EIS 1073. ESL for International Students: Communicating Effectively. (3-0) 3 Credit Hours.

Development of oral discourse, including oral presentation, small group discussion, and pronunciation needed in academic settings.

EIS 1083. English for Academic Purposes I. (3-0) 3 Credit Hours.

Development of English reading, writing and other literacy skills for academic purposes to improve student participation and success in undergraduate studies. (Formerly titled "Content-based Reading").

EIS 1093. English for Academic Purposes II. (3-0) 3 Credit Hours.

Development of English reading, writing and other literacy skills for academic purposes to improve student participation and success in undergraduate studies. (Formerly titled "Content-based Writing").

EIS 1163. Advanced Oral Communications. (3-0) 3 Credit Hours.

Development of oral proficiency skills, including oral presentation skills, required for students at the graduate level.

EIS 1183. Advanced English for Academic Purposes I. (3-0) 3 Credit Hours.

Development of English reading, writing and other literacy skills for advanced academic purposes to improve student participation and success in graduate studies. (Formerly titled "Advanced Reading Strategies").

EIS 1193. Advanced English for Academic Purposes II. (3-0) 3 Credit Hours.

Development of English reading, writing and other literacy skills for advanced academic purposes to improve student participation and success in graduate studies. (Formerly titled "Advanced Writing Strategies").

Entrepreneurship (ENT)

Entrepreneurship (ENT) Courses

ENT 3123. Innovation and Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisites: ACC 2013, ECO 2013, ECO 2023, and a declared major in the College of Business or approval of Department Chair and Dean of the College. Introduces students to entrepreneurship, its importance in society, and role in bringing new ideas to market. It also explores innovation and its role in creating value in business. Course provides an overview of the basic concepts of entrepreneurship focusing on the nature, environment, and risks of new business formation. Course includes focus on innovation and creativity, and introduces the business model canvas.

ENT 4123. Commercialization and Enterprise Planning. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, MGT 3013, and a declared major in the College of Business or approval of Department Chair and Dean of the College. This course offers students a step-by-step instruction in how to develop a business plan for commercialization or enterprise development. The students will learn to present and defend their plan as Venture Capitalists would expect from a pitch. The course emphasizes the plan components, format, marketing and financial projections.

ENT 4223. Managing the Entrepreneurial Team. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, ENT 4123, and a declared major in the College of Business or approval of Department Chair and Dean of the College. This course examines how to recruit, manage and lead an entrepreneurial team. Particular emphasis will be placed on improving students communications and collaboration skills in a cross-functional team context. Students will also explore evolving, collaborative approaches employed by companies to accelerate innovations by using customers, suppliers, partners and other organizations outside the four walls of a company.

ENT 4523. Microlending Entrepreneurial Startups. (3-0) 3 Credit Hours.

Prerequisite: Declared major in the College of Business or approval of Department Chair and Dean of the College. This course focuses on access to capital in the United States as it relates to the financing of startups and the role microlending has played in this financing. Discusses the history of microlending in the entrepreneurship environment, the microlending industry, and factors leading to success or failure of microlenders.

ENT 4623. Tools and Objectives of the Social Enterprise. (3-0) 3 Credit Hours.

Prerequisite: Declared major in the College of Business or approval of Department Chair and Dean of the College. This course investigates the distinctive characteristics of the social enterprise and social entrepreneurs. Examines the role of innovation, the for-profit and not-for-profit models of the social enterprise as well as the corporate structure known as the "B Corporation." Develops ability to evaluate, plan and manage a social enterprise.

ENT 4723. Essentials of Global Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisite: Declared major in the College of Business or approval of Department Chair and Dean of the College. This course examines the importance of the entrepreneurial venture in a changing world; explores the economic, political, cultural and technological differences in operating a business in a global versus a domestic environment; and introduces the concepts related to emerging economy entrepreneurs.

ENT 4873. Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, ENT 4123, and a declared major in the College of Business or approval of Department Chair and Dean of the College. Examines how and why entrepreneurs develop and/or grow a business as facilitated by the objectives and resources of the entrepreneur. Topics include differences between a commercial and social enterprise, developing a strategy formulation, and the development of a sustainable competitive advantage in global and social enterprise. (Formerly MGT 4873. Credit cannot be earned for both ENT 4873 and MGT 4873.).

ENT 4883. Small Business Management. (3-0) 3 Credit Hours.

Prerequisites: MKT 3013, ENT 4123, and a declared major in the College of Business or approval of Department Chair and Dean of the College. Focuses on the startup and operation of small businesses. Examines the accounting, finance, management, and marketing functions as they pertain to entrepreneurial endeavors. Develops overall managerial awareness and analytical skills in small business problem solving. (Formerly MGT 4883. Credit cannot be earned for both ENT 4883 and MGT 4883.).

ENT 4903. Practicum in Small Business and Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisites: ENT 4123, FIN 4333, ENT 4873, ENT 4883, a declared major in the College of Business and permission from the instructor. This practicum will allow students to gain valuable experience. Drawing on the resources of the Colleges of Business and Engineering, local businesses, and entrepreneurs, the practicum provides students with the opportunity to examine real-world business problems, and thus gain insight into the challenges of starting a small business. Students will select from specific business problems or projects and participate in the Center for Innovation and Technology Entrepreneurship business plan competition. (Formerly MGT 4903. Credit cannot be earned for both ENT 4903 and MGT 4903.)

ENT 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: ENT 4873, a 3.0 COB grade point average and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ENT 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: ENT 4873, a 3.0 COB grade point average and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ENT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: ENT 4873, a 3.0 COB grade point average and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ENT 4933. Internship in Entrepreneurship. (0-0) 3 Credit Hours.

Prerequisites: ENT 4873 and 9 additional semester credit hours of Entrepreneurship (ENT) courses, a 2.5 UTSA grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for additional requirements and required forms. The opportunity for entrepreneurial work experience. Requires a semester-long experience in private business or a not-for-profit enterprise and a written component. Opportunities and output requirements are developed in consultation with a faculty advisor and the Department Chair and require approval of both. Internship may be repeated once (for a total of 6 semester credit hours), provided the internships are with different organizations.

ENT 4951. Special Studies in Entrepreneurship. (1-0) 1 Credit Hour.

Prerequisites: ENT 4873 and a declared major in the College of Business or approval of Department Chair and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ENT 4952. Special Studies in Entrepreneurship. (2-0) 2 Credit Hours.

Prerequisites: ENT 4873 and a declared major in the College of Business or approval of Department Chair and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ENT 4953. Special Studies in Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisites: ENT 4873 and a declared major in the College of Business or approval of Department Chair and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Environmental Sciences (ES)

NOTE: All Environmental Sciences (ES) courses used as prerequisites for other Environmental Sciences courses must be completed with a grade of "C-" or better.

Environmental Sciences (ES) Courses

ES 1111. Environmental Botany Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 1111)

Laboratory studies to accompany Environmental Botany Lecture. Selected laboratories pertaining to the structure and function of plants.

ES 1113. Environmental Botany. (3-0) 3 Credit Hours. (TCCN = BIOL 1311)

Study of structure and function of plant cells, tissues, and organs. Includes an evolutionary survey and life histories of the following representative groups: algae, fungi, mosses, liverworts, ferns, and seed producing organisms. Plant reproductive and functional interactions with their environment and with humans. May apply toward the Core Curriculum requirement in Life and Physical Sciences.

ES 1121. Environmental Zoology Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 1113)

Laboratory studies to accompany Environmental Zoology Lecture. Selected laboratories pertaining to the taxonomy, molecular biology, and ecology of animals.

ES 1123. Environmental Zoology. (3-0) 3 Credit Hours. (TCCN = BIOL 1313)

Study of the principles of taxonomy, molecular biology, and ecology as they relate to animal form and function, diversity, behavior, and evolution. May apply toward the Core Curriculum requirement in Life and Physical Sciences.

ES 1211. Environmental Geology Laboratory. (0-3) 1 Credit Hour. (TCCN = GEOL 1105)

Laboratory studies to accompany Environmental Geology Lecture. Selected laboratories pertaining to urban and regional land use planning.

ES 1213. Environmental Geology. (3-0) 3 Credit Hours. (TCCN = GEOL 1305)

The earth as a habitat. Interrelationships between humans and the environment. Geologic factors in urban and regional land use planning.

ES 1314. Environmental Statistics. (3-3) 4 Credit Hours. (TCCN = MATH 1442)

Collection, analysis, presentation and interpretation of environmental data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology, including statistical software.

ES 2013. Introduction to Environmental Systems I. (3-0) 3 Credit Hours. (TCCN = ENVR 1301)

An introduction to the scientific principles, concepts, and methodologies needed to understand the interactions of the biotic component of the natural world, to identify and analyze environmental problems within the biotic component of natural world, risk assessment of these environmental problems, and to examine alternate solutions. General attention is given to the biotic concepts of growth, processes, and changes occurring in ecosystems and social structures. May apply toward the Core Curriculum requirement in Life and Physical Sciences.

ES 2021. Introduction to Environmental Systems I Laboratory. (0-3) 1 Credit Hour.

Concurrent enrollment in ES 2013 is recommended. Qualitative and quantitative methods in the study of biotic environmental systems.

ES 2023. Introduction to Environmental Systems II. (3-0) 3 Credit Hours. (TCCN = ENVR 1302)

An introduction to the scientific principles, concepts, and methodologies needed to understand the interactions of the abiotic component of the natural world, to identify and analyze environmental problems within the abiotic component of the natural world, risk assessment of these environmental problems, and to promote environmental sustainability. General attention is given to the abiotic environmental factors including natural hazards, pollution processes, energy resources, sustainability, and changes occurring in ecosystems. May apply toward the Core Curriculum requirement in Life and Physical Sciences.

ES 2031. Introduction to Environmental Systems II Laboratory. (0-3) 1 Credit Hour.

Concurrent enrollment in ES 2023 is recommended. Qualitative and quantitative methods in the study of abiotic environmental systems.

ES 2113. Fundamentals of Geographic Information Systems (GIS). (2-2) 3 Credit Hours.

Prerequisite: CS 1173. This course will serve as a basic introduction to the concepts and techniques of utilizing a Geographic Information System (GIS) to study and model environmental issues. In lecture and laboratory, students will study methods of querying, analyzing, creating and displaying GIS data utilizing industry standard software. Students will also be introduced to using the Global Positioning System (GPS) as a means for creating GIS data. (Same as GEO 2113. Credit cannot be earned for both ES 2113 and GEO 2113).

ES 3033. Environmental Ecology. (3-0) 3 Credit Hours.

Prerequisites: ES 2013 and ES 2023, or equivalents. Examination of the interactions of biotic and abiotic systems, including interactions of plants, animals, and the environment. (Formerly ES 3034. Credit cannot be earned for more than one of the following: ES 3033, ES 3034 or BIO 3283.).

ES 3042. Environmental Ecology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: ES 2013, ES 2021, ES 2023, and ES 2031, or equivalents. Concurrent enrollment in ES 3033 is recommended. A field-oriented course emphasizing modern ecological techniques, including examinations of plant and animal populations and measurement of selected chemical and physical parameters. (Credit cannot be earned for both ES 3042 and BIO 3292.).

ES 3053. Environmental Remediation. (3-0) 3 Credit Hours.

Prerequisites: CHE 2603, ES 2013, and ES 2023, or equivalents. This course will focus on the fundamentals associated with environmental remediation in relation to the overall environmental quality and protection. Topics covered include contaminant fate and transport; physical, chemical, and biological processes/characteristics of the air, soil, and water; remediation/restoration methods; environmental monitoring; environmental assessments; environmental regulations; and water/wastewater treatment. (Formerly ES 3054. Credit cannot be earned for both ES 3053 and ES 3054.).

ES 3061. Environmental Remediation Laboratory. (0-3) 1 Credit Hour.

Prerequisites: CHE 2603, CHE 2612, ES 2013, and ES 2023, or equivalents. Concurrent enrollment in ES 3053 is recommended. This laboratory and field-based course will provide hands-on experience in environmental remediation that will focus on regulatory aspects of assessing environmental contamination, technologies/strategies used to remediate, and current literature research investigations into remediation.

ES 3103. Environmental Microbiology. (3-0) 3 Credit Hours.

Prerequisites: CHE 2603, ES 2013, and ES 2023, or equivalents, or consent of instructor. This course will survey environmental microbiology and will emphasize microbial interactions in terrestrial and aquatic environments as well as the fate of microbial pathogens. Topics covered include microbial environments, detection of bacteria and their activities in the environment, microbial biogeochemical cycling, bioremediation of organic and inorganic pollutants, and water quality. (Formerly ES 3104. Credit cannot be earned for more than one of the following: ES 3103, ES 3104 or BIO 3713.).

ES 3121. Introduction to Soils Laboratory. (0-3) 1 Credit Hour.

Prerequisites: ES 2013 and ES 2023, or equivalents. Laboratory exercise and field trips designed to develop student competency in soil description, analysis, and assessment.

ES 3123. Introduction to Soils. (3-0) 3 Credit Hours.

Prerequisites: ES 2013 and ES 2023, or equivalents. A study of soil properties and processes and relationships to land use, plant growth, environmental quality, and society.

ES 3141. Watershed Processes Laboratory. (0-3) 1 Credit Hour.

Prerequisites: ES 2013, ES 2023 and ES 1213, or equivalents. Laboratory exercises and field trips designed to develop an understanding of watershed processes, watershed assessment, and watershed management.

ES 3143. Watershed Processes. (3-0) 3 Credit Hours.

Prerequisites: ES 2013, ES 2023 and ES 1213, or equivalents. This course focuses on watershed processes, watershed assessment, and watershed management.

ES 3153. Environmental Chemistry. (3-0) 3 Credit Hours.

Prerequisites: ES 2013, ES 2023, CHE 2603, or equivalents. This course explores the chemistry of the environment, the chemistry underlying environmental problems and solutions to environmental problems. Emphasis is placed on thermodynamics and kinetics of reaction cycles; sources, sinks and transport of chemical species; and quantitation of chemical species. Examples are selected from the chemistry of natural and contaminated air, water, and soil. (Same as CE 4613. Credit cannot be earned for both ES 3153 and CE 4613.).

ES 3163. Ornithology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. A course covering various aspects of the biology of birds, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required. (Same as BIO 4063. Credit cannot be earned for both ES 3163 and BIO 4063.)

ES 3173. Mammalogy. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. A course covering various aspects of the biology of mammals, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required.

ES 3183. Entomology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. A course covering various aspects of the biology of insects, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required.

ES 3193. Herpetology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. A course covering various aspects of the biology of amphibians and reptiles, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required.

ES 3203. Environmental Law. (3-0) 3 Credit Hours.

Present-day environmental enabling acts and regulations will be covered, with emphasis on federal acts, such as the National Environmental Policy Act, Clean Water Act, Resource Conservation and Recovery Act, and associated regulations.

ES 3213. Biology of Flowering Plants. (2-3) 3 Credit Hours.

Prerequisite: Junior or senior status; a minimum of 60 semester credit hours. A study of the wildflowers of Texas emphasizing identification of the more common wildflowers, as well as family characteristics, flower anatomy, plant morphology, and plant-collecting techniques will be included. Lecture, laboratory, and fieldwork will be included as part of the course. (Same as BIO 3273. Credit can only be earned for ES 3213 or BIO 3273.)

ES 3223. Woody Plants. (2-3) 3 Credit Hours.

Prerequisite: Junior or senior status; a minimum of 60 semester credit hours. A study of the woody plants emphasizing the characteristics of family, genus, and species. Includes identification of the common woody plants. Leaf, stem, and flower morphology, anatomy, and collecting techniques. Lecture, laboratory, and fieldwork will be included as part of the course. (Same as BIO 3263. Credit can only be earned for ES 3223 or BIO 3263.)

ES 4003. Environmental Chemistry and Toxicology. (3-0) 3 Credit Hours.

Prerequisites: CHE 2603, ES 2013, and ES 2023, or equivalents. Chemical principles applied to the understanding of processes in aquatic and environmental systems. Emphasis will be on physical, chemical, and biological processes in treatment and processing of hazardous waste materials.

ES 4011. Environmental Chemistry and Toxicology Laboratory. (0-3) 1 Credit Hour.

Prerequisites: CHE 2603, ES 2013, and ES 2023, or equivalents. Concurrent enrollment in ES 4003 is recommended. Laboratory principles applied to the understanding of processes in aquatic and environmental systems. Emphasis will be on physical, chemical, and biological processes in treatment and processing of hazardous wastes materials.

ES 4103. Global Change. (3-0) 3 Credit Hours.

Prerequisites: CHE 2603, ES 2013, and ES 2023, or equivalents. Changes in the global distribution of plants and animals and the causes of the changes will be examined. Factors that are apparently coupled to changes in these distributions will be examined including, but not limited to, atmospheric composition change and temperature change. Additionally, examination of the impact of humans and their activities on the environment: their effect on aquatic, marine, and terrestrial plant, animal, and human resources. (Formerly ES 4104. Credit cannot be earned for both ES 4103 and ES 4104.)

ES 4111. Field Biology Laboratory. (0-3) 1 Credit Hour.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. Concurrent enrollment in ES 4113 is recommended. A field-oriented course offering the opportunity for practical experience observing, collecting, and identifying Texas plants and animals. (Same as BIO 4241. Credit cannot be earned for both ES 4111 and BIO 4241.)

ES 4113. Field Biology. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. Concurrent enrollment in ES 4111 is recommended. A study of the natural history of plants and animals in their native environment. Techniques for the identification of birds, mammals, reptiles, amphibians, insects, and the dominant flowering plants will be discussed. (Same as BIO 4233. Credit cannot be earned for both ES 4113 and BIO 4233.)

ES 4123. Desert Biology. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. An introduction to wildlife biology and management including ecological principles dealing with ecosystems, natural communities, and populations. The importance of animal behavior, the availability of food, cover, wildlife diseases, predators, hunting, and trapping will be included. Field studies will allow students to observe and apply classroom topics.

ES 4133. Natural Resource Policy and Administration. (3-0) 3 Credit Hours.

Prerequisite: ES 3203 or equivalent. Factors in evolution of forest, range, wildlife and related natural resources administration and policies in the United States; policy components; policy formation implementation, administration and change processes; introduction to criteria for evaluating effectiveness of policies and administration.

ES 4143. Environmental Geomorphology. (3-0) 3 Credit Hours.

Prerequisites: ES 1213 or consent of instructor, and junior or senior standing. Examination of landforms on the Earth's surface and landscape-forming processes. Field trips may be required.

ES 4153. Introduction to Sustainability. (3-0) 3 Credit Hours.

Prerequisites: ES 2023 and junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. This course will examine the major environmental issues and trends happening in modern society from a scientific and practical perspective, including biodiversity, population, food and water resources, climate change, energy, public health, and the overall forecast for the environment for the next several decades.

ES 4163. Renewable Energy. (3-0) 3 Credit Hours.

Prerequisites: ES 2023 and junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. This course is an introduction to energy systems and renewable energy resources, with a scientific examination of the energy field and an emphasis on alternate energy sources and their technology and application.

ES 4173. Waste Water Treatment. (2-3) 3 Credit Hours.

Prerequisite: ES 2023 and junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. The application of chemical, biochemical, and physical processes to water treatment, wastewater treatment, and pollution control.

ES 4183. Environmental Toxicology. (3-0) 3 Credit Hours.

Prerequisites: ES 2023 and CHE 2603, or equivalents. Examination of advanced or specialized hazardous or toxic waste treatment methods. Emphasis will be on physical, chemical, and biological processes in treatment and processing of hazardous wastes materials.

ES 4203. Environmental Assessment. (3-0) 3 Credit Hours.

Prerequisites: ES 2013 and ES 2023, or equivalents. This course evaluates the framework of an impact assessment and details regarding the environment (air, water, soil), its pollutants (atmospheric, noise, water, solid waste), their impacts (physical, social, economic), relevant regulations, and pollution minimization or management strategies. Students use this information to review and comment on an existing Environmental Impact Statement (EIS).

ES 4211. Senior Seminar. (1-0) 1 Credit Hour.

Prerequisite: Senior status: Environmental Science majors and a minimum of 90 credit hours. The techniques of seminar presentation will be studied by preparing and presenting individual seminars on topics of interest. Enrollment for credit is limited to, and required of, all senior students majoring in environmental studies.

ES 4213. Conservation Biology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. The class topics will include studying the nature of the biosphere, threats to its integrity, and ecologically sound responses to these threats. Also included will be the origin and preservation of biotic diversity, how the rich variety of plant and animal life around us arose, how it has been maintained by natural processes, and how we can prevent its destruction. (Same as BIO 4033. Credit cannot be earned for both ES 4213 and BIO 4033.)

ES 4233. Restoration Ecology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. Applies ecological principles to the restoration of disturbed terrestrial, wetland, and aquatic ecosystems. Includes the restoration of soils and waterways, of flora and fauna, and of natural ecological processes such as plant succession and nutrient cycling.

ES 4243. Wildlife Management. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. An introduction to wildlife biology and management including ecological principles dealing with ecosystems, natural communities, and populations. The importance of animal behavior, the availability of food, cover, wildlife diseases, predators, hunting, and trapping will be included. Field studies will allow students to observe and apply classroom. (Same as BIO 4053. Credit cannot be earned for both ES 4243 and BIO 4053.)

ES 4253. Sources, Fate, and Transport of Chemicals in the Environment. (3-0) 3 Credit Hours.

Prerequisites: ES 2013, ES 2023, CHE 2603, or equivalents. Sources of chemicals in the environment. Processes regulating fate and transport of metals, organics, nutrients, salts, pathogens, and radionuclides in the environment.

ES 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ES 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ES 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ES 4951. Special Studies in Environmental Science. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ES 4953. Special Studies in Environmental Science. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Facility and Property Management (FM)

Facility and Property Management (FM) Courses

FM 4233. Sport and Event Facility Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013. This course provides an overview of managing a facility used for sports, conventions, and entertainment events. Some of the topics are conducting feasibility studies, market research, facility design and layout, event bidding, quality assurance, risk management, and event staffing. Real Estate Finance and Development majors cannot take SET 4233 for the degree requirements but can take FM 4233. (Same as SET 4233. Credit cannot be earned for both FM 4233 and SET 4233.)

FM 4303. Facility and Property Management Policies and Procedures. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013. The implementation of professional policies, standards, practices, and procedures for the leasing, operation and maintenance of facilities. Topics include the facility management profession, leasing, and the acquisition, installation, operation, maintenance and disposition of building systems, furniture and fixtures, and grounds and exterior elements. (Formerly MGT 4303 and RFD 4303. Credit cannot be earned for FM 4303 and either MGT 4303 or RFD 4303.).

FM 4313. Facility and Property Management Practices. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013. The application of management practices to the operation of facilities. Topics include the study of human and environmental factors, building safety, building audits, building technology, emergency preparedness, the use and changing uses of facilities, and continuous quality improvement. (Formerly MGT 4313 and RFD 4313. Credit cannot be earned for FM 4313 and either MGT 4313 or RFD 4313.).

Finance (FIN)

Finance (FIN) Courses

FIN 3003. Survey of Finance. (3-0) 3 Credit Hours.

Prerequisite: ACC 2003 or ACC 2013 or the equivalent. A basic survey course focusing on three aspects of finance: the financial system, corporate finance, and investments. The financial environment will be described along with how the financial system interacts with the economy. Business decisions, efficient allocation of financial resources, and fundamentals of investment will be introduced. This course may not be applied toward a major or a minor in finance.

FIN 3014. Principles of Business Finance. (4-0) 4 Credit Hours.

Prerequisites: MAT 1033, MS 1023, ACC 2013, and ECO 2013 or their equivalents. Completion or concurrent enrollment in ACC 2033. Introduction to financial management techniques. Topics may include time value of money, valuation of stocks and bonds, risk and return, capital budgeting analysis, financing alternatives, financial planning, ratio analysis, short-term financial decisions, working capital, sources and uses of funds, capital structure, dividend policy, lease analysis, options, international financial management, and other topics associated with successful business finance decisions in an internationally competitive environment. One-hour laboratory included. (Formerly FIN 3013. Credit cannot be earned for both FIN 3014 and FIN 3013.).

FIN 3023. Intermediate Corporate Finance. (3-0) 3 Credit Hours.

Prerequisites: FIN 3014, or the equivalent, with a grade of "C-" or better and successful completion of the Finance Assessment of Competency Test (FACT). Completion or concurrent enrollment in ACC 3023 or ACC 3053. Advanced discussion of subjects essential to corporate financial management, including short-term credit policies, capital budgeting, risk, sources of long-term funds, financial leverage, and the cost of capital. Special topics such as mergers, bankruptcy, and reorganization may also be considered.

FIN 3033. Principles of Investment. (3-0) 3 Credit Hours.

Prerequisite: FIN 3014, or the equivalent, with a grade of "C-" or better. Introduction to securities markets; analysis of money market instruments, mutual funds, stocks, bonds, options, futures, and other securities; investment management in the light of tax considerations, timing, and selected portfolio needs.

FIN 3313. Money and Banking. (3-0) 3 Credit Hours.

Prerequisite: ECO 2013 or the equivalent. Elements of monetary theory; relationships between money, prices, production, and employment; factors determining money supply; and operation of capital markets with reference to the United States.

FIN 3413. Introduction to Financial Markets. (3-0) 3 Credit Hours.

Prerequisite: FIN 3313 or the equivalent. This course addresses the development of financial markets and market pricing of debt, equity, and foreign exchange. Special emphasis is placed on current and historical events to discuss these topics.

FIN 3423. Security Analysis. (3-0) 3 Credit Hours.

Prerequisite: FIN 3033 or the equivalent. Advanced financial analysis; examination of statements and supplementary data of industrial, commercial, financial intermediary, and public enterprises; preparation of reports relevant to achieving an understanding of financial management policies.

FIN 3433. Principles of Real Estate. (3-0) 3 Credit Hours.

General introduction to the subject matter and terminology of real estate as a business and profession; federal, state, and local laws governing housing discrimination, equal credit opportunity, and community reinvestment.

FIN 3443. Technical Analysis. (3-0) 3 Credit Hours.

Prerequisite: FIN 3014 with a grade of "C-" or better. Introduction to technical analysis of financial markets. Topics include trend analysis, charting techniques, measures of market sentiment, Dow theory, and cycle theories. Security selection, trading system management, and risk management are explored.

FIN 4323. Financial Institutions Management. (3-0) 3 Credit Hours.

Prerequisite: FIN 3014 with a grade of "C-" or better. Direction and coordination of the various functions of the financial firm, including money position, lending, and capital management. Emphasis on asset and liability management in a changing environment of regulation, competition, and financial intermediation.

FIN 4333. Business Finance for Entrepreneurs. (3-0) 3 Credit Hours.

Prerequisite: FIN 3014 with a grade of "C-" or better. Development of financial management techniques for developing businesses. Topics include cash flow projections, managing cash and working capital, estimating cost of capital, project evaluation, issues of limited diversification, and nontraditional sources of funds as well as growth and exit strategies.

FIN 4413. Trading and Analysis of Financial Instruments. (3-0) 3 Credit Hours.

Prerequisites: FIN 3033 and consent of instructor and approval of the Department Chair and the Dean of the College. Theoretical concepts in investments analysis and trading applications with real-time and historical data are developed. Topics include technical and fundamental analysis of equity portfolios, fixed income valuation, and credit risk analysis. Computer applications include Bloomberg Professional® software.

FIN 4423. Investment Portfolio Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3033 or the equivalent. Application of investment principles to management of investment portfolios of individuals and institutions; consideration of business cycles, investment constraints, portfolio construction, investment timing, and securities selection. Analysis of derivative securities and their use in the portfolio context.

FIN 4523. Introduction to Risk Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3014 or consent of instructor and approval of the Department Chair and the Dean of the College. Analysis of risk management tools as an integral part of corporate financial decisions; alternatives for spreading risk such as insurance, retention funds, and external funds.

FIN 4613. Introduction to International Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3014 or the equivalent. Study of underlying forces in international financial relations and the unique problems of international trade, investments, and operations; examination of multinational business finance and its economic, legal, and political dimensions.

FIN 4713. Mortgage Banking and Real Estate Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3014, and FIN 3433, or consent of instructor, approval of the Department Chair and the Dean of the College. Planning, structure, and analysis of real estate financing from the viewpoints of both the users and suppliers of funds; examination of various techniques and legal instruments; institutional constraints and their effects on real estate lending activities; and federal, state, and local laws governing housing discrimination, equal credit opportunity, and community reinvestment.

FIN 4723. Principles of Real Estate Investment. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3014, and FIN 3433, or consent of instructor, approval of the Department Chair and the Dean of the College. Analysis of real estate investment alternatives; feasibility and site analysis; tax considerations; income and expense analysis; discounted cash flow analysis; profitability measurement; and forms of ownership.

FIN 4733. Principles of Sustainable Real Estate Development. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3014, FIN 3433, and FIN 4713 or FIN 4723, or consent of instructor, approval of the Department Chair and Dean of the College. The examination of the principles involved in creating value through the real estate development process. Economic, regulatory, planning, financing, management and disposition issues are considered in the marketing and financial analyses of development prospects. (Same as RFD 4733. Credit cannot be earned for both FIN 4733 and RFD 4733. Finance majors cannot take RFD 4733 as an upper-division finance elective.).

FIN 4813. Property-Liability Insurance Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3014 or the equivalent. Analysis and management of risk and insurance, including the insurance contract, property insurance, liability insurance, business insurance, the insurance agency, financial structure and management of property-liability companies, and contemporary problems of property-liability insurance.

FIN 4823. Life and Health Insurance Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3014 or the equivalent. Philosophy of the life risk is developed, as well as an understanding of the special character of life and health insurance, human life value, the customary and special uses of life insurance, and the history of life insurance companies. Life, health, and disability insurance contracts are investigated in addition to term and whole life insurance, agency structure, and current issues of life and health insurance.

FIN 4853. Real Estate Appraisal. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3014, and FIN 3433, their equivalents, or consent of instructor, approval of the Department Chair and the Dean of the College. Functions and methods of property valuation, including comparable sales analysis, cost depreciation analysis, and income capitalization; residential and income property appraisal techniques and reporting. (Same as RFD 4853. Credit cannot be earned for both FIN 4853 and RFD 4853. Finance majors cannot take RFD 4853 as an upper-division finance elective.).

FIN 4873. Computer Modeling of Financial Applications. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, IS 3003, and FIN 3014 or their equivalents. Provides the opportunity to develop computer modeling skills and techniques for analyzing financial situations encountered in business, including the analysis of financial statements, forecasting, capital budgeting, and principles of investment analysis of securities. Financial issues involving uncertainty are examined.

FIN 4893. Cases and Problems in Finance. (3-0) 3 Credit Hours.

Prerequisites: FIN 3023, FIN 3033, FIN 3313, ACC 3023, senior standing, and 3 hours of additional finance electives. Students are also required to meet all University regulations related to good academic standing and maintain a minimum grade point average of 2.0 in all courses, and in UTSA College of Business courses, and in all courses for the major. Approval is obtained through the academic advisor. Integration of financial concepts and financial tools to enable strategic financial decision making in a wide variety of situations. Topics include corporate finance, investments, international finance, risk management, and other aspects of finance.

FIN 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 COB grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

FIN 4933. Internship in Finance. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, 9 semester credit hours of upper-division finance courses, a 2.5 UTSA grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. The opportunity for professional work experience in research of financial operations, including real estate and insurance, and may be undertaken in either private business or a public agency. Opportunities are developed in consultation with the faculty advisor and Department Chair and require approval of both. Internship may be repeated once (for a total of 6 semester credit hours) provided the internships are with different organizations, but only 3 hours may count toward the 21 hours of finance required for the major.

FIN 4951. Special Studies in Finance. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 and consent of instructor, and approval of the Department Chair and the Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

FIN 4953. Special Studies in Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, and approval of the Department Chair and the Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

FIN 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: MGT 3003. Enrollment limited to students applying for Honors in Finance. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Foreign Languages (FL)

Foreign Languages (FL) Courses

FL 1034. Beginning Language Study Abroad. (0-0) 4 Credit Hours.

Prerequisite: Consent of instructor. Opportunity to begin developing oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 8 semester credit hours in each language.

FL 1038. Beginning Language Study Abroad. (0-0) 8 Credit Hours.

Prerequisite: Consent of instructor. Opportunity to begin developing oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 8 semester credit hours in each language.

FL 1044. Individualized Instruction in Basic Language. (0-0) 4 Credit Hours.

Prerequisite: Consent of instructor. Opportunity to develop basic oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Generally restricted to special projects or languages not regularly offered as organized classes. May be repeated up to 8 semester credit hours in each language.

FL 2033. Intermediate Language Study Abroad. (0-0) 3 Credit Hours.

Prerequisites: Consent of instructor and 1008, 1024, or the equivalent in the selected foreign language. Opportunity to develop intermediate-level oral and written communication skills in the target language, along with increased comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 6 semester credit hours in each language.

FL 2036. Intermediate Language Study Abroad. (0-0) 6 Credit Hours.

Prerequisites: Consent of instructor and 1008, 1024, or the equivalent in the selected foreign language. Opportunity to develop intermediate-level oral and written communication skills in the target language, along with increased comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 6 semester credit hours in each language.

FL 2043. Individualized Instruction in Intermediate-Level Language. (0-0) 3 Credit Hours.

Prerequisites: Consent of instructor and 1008, 1024, or the equivalent in the selected foreign language. Opportunity to develop intermediate-level oral and written communication skills in the target language, along with increased comprehension skills in listening and reading. Generally restricted to special projects or languages not regularly offered as organized classes. May be repeated up to 6 semester credit hours in each language.

FL 3003. Introduction to Translation and Interpretation. (3-0) 3 Credit Hours.

Prerequisites: At least four courses of any single foreign language. Principles of translation or interpreting including practice with a variety of discourse types. Students will be introduced to realities of language mediation professions as well as main concepts in translation and interpreting studies theory. May be repeated for credit when language or focus varies.

FL 3013. Translation and Interpretation for the Language Specialist. (3-0) 3 Credit Hours.

Prerequisite: At least one course at the 3000 level in the selected foreign language. This course will explore the language-related and cultural issues involved in translation and interpretation and will include practice from selected areas, such as business, health care, law, technology, or the arts. May be repeated for credit when topics, languages or foci vary.

FL 3033. Advanced Language Study Abroad. (0-0) 3 Credit Hours.

Prerequisites: Consent of instructor and 2006, 2023, or the equivalent in the selected foreign language. Opportunity to develop advanced-level oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 6 semester credit hours in each language.

FL 3036. Advanced Language Study Abroad. (0-0) 6 Credit Hours.

Prerequisites: Consent of instructor and 2006, 2023, or the equivalent in the selected foreign language. Opportunity to develop advanced-level oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 6 semester credit hours in each language.

FL 3043. Individualized Instruction in Advanced-Level Language. (0-0) 3 Credit Hours.

Prerequisites: Consent of instructor and 2006, 2023, or the equivalent in the selected foreign language. Opportunity to develop advanced-level oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Generally restricted to special projects or languages not regularly offered as organized classes. May be repeated up to 6 semester credit hours in each language.

FL 3101. Languages Across the Curriculum. (0-0) 1 Credit Hour.

Prerequisite: Consent of instructor. Online add-on course offering a concurrent language component for courses in other disciplines, such as art, anthropology, history, humanities, music and political science. May be repeated for credit when topics vary.

FL 4243. Foreign Language Instruction. (3-0) 3 Credit Hours.

Prerequisite: 2023 or an equivalent in a foreign language. A study of second-language-acquisition theories. Emphasis on instructional methodology as it relates to foreign languages and cultures.

FL 4933. Internship. (0-0) 3 Credit Hours.

Prerequisite: Permission of Department Chair. Supervised experience in a setting that provides the opportunity to integrate theory and practice in language usage. May be repeated once for credit.

FL 4953. Special Projects. (0-0) 3 Credit Hours.

Prerequisite: Permission of Department Chair. Opportunity to apply advanced-level oral and written language skills in a research project. This course is especially designed as the Signature Experience for language majors. May be repeated up to 6 semester credit hours in each language.

French (FRN)

French (FRN) Courses

FRN 1014. Elementary French I. (3-2) 4 Credit Hours. (TCCN = FREN 1411)

Fundamentals of French offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Introduction to French culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

FRN 1024. Elementary French II. (3-2) 4 Credit Hours. (TCCN = FREN 1412)

Prerequisite: FRN 1014, the equivalent, an appropriate placement test score, or consent of instructor. Fundamentals of French offering the opportunity to develop listening, speaking, reading, and writing skills. Further study of French culture.

FRN 2013. Intermediate French I. (3-1) 3 Credit Hours. (TCCN = FREN 2311)

Prerequisite: FRN 1024, the equivalent, an appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, reading, speaking, and writing skills. Grammar review and further study of French culture.

FRN 2023. Intermediate French II. (3-1) 3 Credit Hours. (TCCN = FREN 2312)

Prerequisite: FRN 2013, the equivalent, an appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, reading, speaking, and writing skills. Grammar review and further study of French culture.

FRN 2333. French Literature in English Translation. (3-0) 3 Credit Hours. (TCCN = ENGL 2331)

Major works of French literature across time, genres, and movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly FRN 3333. Credit cannot be earned for both FRN 2333 and FRN 3333.)

FRN 3023. Advanced Language Skills. (3-0) 3 Credit Hours.

Prerequisite: FRN 2023 or consent of instructor. Development of oral and written language skills using contemporary readings, media, and oral discourse. Emphasis on increasing fluency through vocabulary expansion activities and selective grammar review. May be repeated for credit when topics vary.

FRN 3053. Business French. (3-0) 3 Credit Hours.

Prerequisite: FRN 2023 or consent of instructor. Introduction to the basic context of the French economy and business world, with emphasis on development of practical language skills to deal with matters such as commercial correspondence, documents, reports, telecommunications, and conferences. Attention to vocabulary and style specific to French business. Practice in translation on business-related topics.

FRN 3413. Survey of French Literature and Culture. (3-0) 3 Credit Hours.

Prerequisite: FRN 2023 or consent of instructor. Selections from French literature and culture studied as reflections and interpretations of central movements in French cultural history. Introduction to concepts of style, genre, and period. May be repeated for credit when topics vary.

FRN 4003. Topics in French Literature. (3-0) 3 Credit Hours.

Prerequisite: FRN 2023 or consent of instructor. Focus on a specific area of French literature, from the medieval period through the 21st century. Selected texts are studied as examples of representative movements, genres, or authors in French literary history. May be repeated for credit when topics vary.

FRN 4213. Topics in French Culture and Linguistics. (3-0) 3 Credit Hours.

Prerequisite: FRN 2023 or consent of instructor. Selected topics of cultural history or linguistics from medieval period through the 21st century. May be repeated for credit when topics vary.

FRN 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

FRN 4933. Internship in French. (0-0) 3 Credit Hours.

Prerequisite: Permission of Department Chair. Supervised experience in a setting that provides the opportunity to integrate theory and practice in language usage. May be repeated once for credit.

FRN 4953. Special Studies in French. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

FRN 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisite: Consent of the undergraduate advisor. Supervised research and preparation of an honors thesis. May be repeated once for credit, with approval.

General Business Administration (GBA)

General Business Administration (GBA) Courses

GBA 2013. Social and Ethical Issues in Business. (3-0) 3 Credit Hours.

A study of the social and ethical responsibilities of business organizations and of the people who work in those organizations.

GBA 4951. Special Studies in General Business Administration. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 and consent of instructor, Department Chair, and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GBA 4952. Special Studies in General Business Administration. (2-0) 2 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, Department Chair, and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GBA 4953. Special Studies in General Business Administration. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, Department Chair, and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Generating Educational Excellence in Math and Science (GEM)

Generating Educational Excellence in Math and Science (GEM) Courses

GEM 1011. GEEMS Mathematics/Science I. (1-2) 1 Credit Hour.

This course introduces students to the prospect of mathematics and science secondary teaching as a career choice through hands-on experiences observing and teaching in an elementary classroom. Students will work in teams with an exemplary elementary teacher at one of the local school districts participating in mathematics and science classes. Class activities will emphasize the qualities of good mathematics and science teaching, including standards-based instruction and the integration of resources into effective class planning. Field-based experiences required. Restricted course; GEEMS Office approval required for registration. (Formerly UTE 1011. Credit cannot be earned for both GEM 1011 and UTE 1011.).

GEM 1021. GEEMS Mathematics/Science II. (1-2) 1 Credit Hour.

Prerequisite: GEM 1011. Builds on the teaching practices, lesson plan design, and instructional models used in GEM 1011, but in a middle school setting. Students become familiar with the reform movements in the middle school concept and philosophy. Through class activities and observations of middle school mathematics and science teachers, students identify the instructional and management strategies and assessment techniques appropriate to early adolescence. Students work in teams with an exemplary middle school teacher to design and deliver lessons appropriate to middle school students. Field-based experiences required. Restricted course; GEEMS Office approval required for registration. (Formerly UTE 1021. Credit cannot be earned for both GEM 1021 and UTE 1021.).

GEM 1031. GEEMS Mathematics/Science III. (1-2) 1 Credit Hour.

Prerequisite: GEM 1021. Builds on the teaching practices, lesson plan design, and instructional models used in GEM 1021, but in a high school setting. Students become familiar with the reform movements in the high school concept and philosophy. Through class activities and observations of high school mathematics and science teachers, students identify the instructional and management strategies and assessment techniques appropriate to adolescence. Students work in teams with an exemplary high school teacher to design and deliver lessons appropriate to high school students. Field-based experiences required. Restricted course; GEEMS Office approval required for registration. (Formerly UTE 1031. Credit cannot be earned for both GEM 1031 and UTE 1031.).

Geography (GRG)

Geography (GRG) Courses

GRG 1013. Fundamentals of Geography. (3-0) 3 Credit Hours. (TCCN = GEOG 1300)

Introduction to the study of physical and cultural features of the earth and their distributions, causes, and consequences to humans. Topics include landforms, climate, natural resources, population, human behavior in spatial context, economic growth, urbanization, and political systems. May apply toward the Core Curriculum requirement in Social and Behavioral Sciences.

GRG 1023. World Regional Geography. (3-0) 3 Credit Hours. (TCCN = GEOG 1303)

Study of the world's regions, focusing on salient physical, cultural, economic, and political characteristics, including physiography, climate, natural resources, population, economic structure and development, globalization, urban growth, cultural institutions, and political structure. Regions include North America, Latin America, Europe, Middle East/North Africa, Sub-Saharan Africa, South Asia, Japan, China and East Asia, the Russian Federation, and Australasia. May apply toward the Core Curriculum requirement in Language, Philosophy and Culture.

GRG 2613. Physical Geography. (3-0) 3 Credit Hours. (TCCN = GEOG 1301)

Study of the earth's major landforms and climatic patterns, the processes giving use to these patterns, and their relationship to human activity. Includes the geomorphology of volcanoes, glaciers, coral reefs, mountains, caves, dunes, and plate tectonics. May apply toward the Core Curriculum requirement in Life and Physical Sciences.

GRG 2623. Human Geography. (3-0) 3 Credit Hours. (TCCN = GEOG 1302)

Study of the relationship between the social and spatial aspects of human behavior. Topics include stereotyping of people and places, human proxemics and territoriality, perception of places, environmental perception, spatial diffusion, and human migration. May apply toward the Core Curriculum requirement in Social and Behavioral Sciences.

GRG 3113. Geography of the United States and Canada. (3-0) 3 Credit Hours.

Study of selected geographic aspects of the major regions of the United States and Canada, emphasizing current social and economic issues in these regions. From a contextualizing treatment of the continent's physical geographies, the course proceeds to the social geographies of the major ethnic groups, showing how the historical management and appropriation of space has been integral to determining the character of the contemporary social hierarchy at the national level. The course proceeds through analyses of social and economic patterns of development, including the national and internal geographical patterns of North American cities.

GRG 3123. Geography of Latin America. (3-0) 3 Credit Hours.

Beginning with basic aspects of the physical environment, the course examines the social geographies of pre-colonial and colonial Latin America. The structural factors of Latin American economies and cultural institutions are then examined. Emphasis is on their spatial manifestations and their role in producing a Latin America often termed "underdeveloped." The emerging role of Latin America in the democratic world order of the post-1990s is also examined.

GRG 3133. Geography of Europe. (3-0) 3 Credit Hours.

Survey of the European culture area, including Western Europe, Eastern Europe, and the Baltics. Discussion of historical, urban, political, ethnic, and economic forces shaping the 21st-century geography of Europe, including the European Union and the Russian Federation.

GRG 3143. Geography of Mexico. (3-0) 3 Credit Hours.

Investigation of Mexico's physical and social geography, including climatic and geomorphologic influences, the historical imprint of the Amerindians and the Spanish, population growth and migration, urbanization, political reform, social and cultural change, agriculture and industry, trade liberalization and the impact of NAFTA. May include a field trip to Mexico.

GRG 3153. Geography of Texas. (3-0) 3 Credit Hours.

A topical and regional examination of the physical, cultural, and economic patterns of the state. Includes demographic characteristics, agriculture, mining, manufacturing, selected urban areas, and current social issues. May include a field trip to the nonmetropolitan hinterland of San Antonio.

GRG 3166. Physical and Cultural Geography of the American Southwest. (6-0) 6 Credit Hours.

A capstone course in geography with both classroom and field components including visiting sites, keeping field logs and making student presentations. Illustrates how the principles of physical and cultural geography play out in the physical and cultural landscapes of the Southwest. The one-week field portion includes travel in vans to areas that may include West Texas and New Mexico in addition to adjacent Colorado, Arizona, and Utah. Students will stay in campgrounds and walk into historic and natural sites.

GRG 3213. Cultural Geography. (3-0) 3 Credit Hours.

A thematic exploration of the nature and distribution of human culture hearths, population, folk culture, popular culture, agriculture, industrialization, languages, and religion. Topics are defined and examined in the context of their manifestations and influences as regions, cultural diffusion, ecology, cultural interaction, and landscapes.

GRG 3314. Introduction to Geographic Information Systems. (3-2) 4 Credit Hours.

An introductory course on the application of the computer to the acquisition, manipulation, analysis, and display of geographic data; overview of projection systems, data acquisition issues, and presentation techniques. Three lecture and two laboratory hours per week. (Formerly GRG 3313. Credit cannot be earned for both GRG 3314 and GRG 3313.)

GRG 3323. Spatial Analysis. (3-0) 3 Credit Hours.

Conceptualization, operationalization, and analysis of relationships in geography and the social sciences. Includes the scientific method, research design, sampling, interpretation of spatial patterns, statistics, and univariate and multivariate analysis. Involves use of computer software in the analysis and display of data.

GRG 3334. Advanced Geographic Information Systems. (3-2) 4 Credit Hours.

Prerequisite: GRG 3314. Advanced topics in the use of computer-based analysis of geographic information including data acquisition, modeling complex datasets, and an introduction to scripting to customize an industry-standard software package. (Formerly GRG 3333. Credit cannot be earned for both GRG 3334 and GRG 3333.)

GRG 3343. Analytical and Computer Cartography. (2-2) 3 Credit Hours.

The design, construction, production, and reproduction of maps using computer hardware and software. Topics may include cartographic theory, principles of visual communication, and the techniques of geographic visualization, including 3-D and 4-D modeling and animation.

GRG 3413. Geography of the Middle East and North Africa. (3-0) 3 Credit Hours.

An analysis of the states spanning the Maghreb from Morocco to Libya; Egypt; and the Middle East from Turkey and the Arabian Peninsula to Pakistan. Examination of the region's physical and social geography and its political and economic dynamics from early history to modern times.

GRG 3423. Geopolitics of Russia and Eurasia. (3-0) 3 Credit Hours.

Multidisciplinary introduction and regional study of the Russian Federation and the Eurasian realm, including the Caucasus, Central Asian nations, Afghanistan, and Mongolia. Both the geography and the politics of this area will be analyzed. Historical and contemporary geopolitical topics include nation-building, regional civilizations, revolution, terrorism, the 19th-century "Great Game," the rise of the USSR, and the current transition of the Russian Federation to an uncertain future. (Same as POL 3423. Credit cannot be earned for both GRG 3423 and POL 3423.)

GRG 3433. The Geography and Politics of the Asian Rim. (3-0) 3 Credit Hours.

An analysis of the states spanning from the Indian subcontinent through Indo-China to Japan and China. Examination of their physical and social geographies and the regional political dynamics prevalent in the modern era. Selected themes will include population dynamics, cultural hearths, immigration patterns, economic development, and regional integration.

GRG 3443. Medical Geography. (3-0) 3 Credit Hours.

The human ecology of health. Analysis of the cultural/environmental interactions that explain world patterns of disease, their diffusion and treatment.

GRG 3453. Population Geography. (3-0) 3 Credit Hours.

Study of the spatial dimensions of population distribution, growth, and mobility. Includes the historical and modern reasons for global patterns of population, the changes in birth and death rates over time, and levels of development as explained by the demographic transition and population policies. Special attention will be given to human migration theories, models, and case studies at the intra-urban, internal, and international levels. Global issues that are related to population growth and movement, such as political conflict and governance, disease, and immigration policy, will be covered.

GRG 3463. The Geography of Tourism. (3-0) 3 Credit Hours.

Introduces the principles and practices of global tourism, including its geographic diversity and the connections between tourist origins and destinations. Discusses the economic importance and dimensions of tourism and the social, economic, and environmental impacts it has on host societies.

GRG 3513. Urban Geography. (3-0) 3 Credit Hours.

A geographic examination of the environmental settings and impacts, history, structure, growth, area of influence, economic base, social structure, and culture of cities. Topics may include the physiography and climate of cities, preindustrial and industrial cities in history, urban land-use models and examples, factors that influence the growth and decline of cities, central place theory and the city's tributary region, the community economic base and the economic multiplier, social area analysis, and the city as a center of cultural diversity. Focus of the course may be local, national, or international.

GRG 3523. Introduction to Urban Planning. (3-0) 3 Credit Hours.

An introduction to the urban public policy, urban dynamics, selected problems, and the role of the master planning process in their management and solution. Issues and themes include poverty, public education, urban growth, municipal and regional government, energy and waste management, historic preservation and urban design, and relationships between transportation and land use.

GRG 3533. Geography of Economic Activity. (3-0) 3 Credit Hours.

Investigates the location of agricultural, industrial, retail and service activities, and transportation flows, through relevant theories and models. Includes case studies of agricultural land use around cities, the urban economic base, shift-share analysis, global impacts on the local economy, and central place principles such as threshold and range. Major focus is on the San Antonio region.

GRG 3613. Conservation of Resources. (3-0) 3 Credit Hours.

A survey of natural resources, environmental policies, global consumption patterns, and the competing values that affect them. Topics include agriculture, water resources, air pollution, waste disposal, land management, wildlife preservation, habitat conservation, biodiversity, energy production, urban sprawl, economic growth, and other selected components of built and natural systems.

GRG 3623. Geography of Natural Hazards. (3-0) 3 Credit Hours.

This course introduces students to the geophysical phenomena that are the root causes of natural disasters, as well as the social institutions and human geographies that exacerbate them. Hazards covered in this class may include earthquakes, tsunamis, volcanic eruptions, hurricanes, tornados, floods, drought, wildfire, and global climate.

GRG 3633. Geography of Development. (3-0) 3 Credit Hours.

Survey and analysis of economic growth and social change in different parts of the world, with an emphasis on less-developed countries. Topics may include the definition of development, the major theories of development and underdevelopment, the evolution of global inequalities, the impacts of population growth and migration, the role of agriculture, industry, and transportation in the development, and cultural imperialism and the rise of religious fundamentalism.

GRG 3643. Political Geography. (3-0) 3 Credit Hours.

Investigates the role of the political state in society and the evolution of state organization from classical times to the present. Topics may include centrifugal and centripetal forces, geopolitics, territorial morphology, boundaries, core areas, and emerging supranationalism.

GRG 3653. Gender and Cities: An Introduction to Feminist Geography. (3-0) 3 Credit Hours.

The course studies the role of women in the spatial organizations of society. Topics may include analysis of gendered spaces, the importance of gender relations in shaping physical, social, and built environments, and the spatial-economic consequences of gender-based policies. (Formerly titled "Geographic Perspectives on Women.")

GRG 3713. Weather and Climate. (3-0) 3 Credit Hours.

Analysis of the elements and causes of daily weather, climatic classifications, and climate change. Study of world distributions and components of climate, with studies of air pressure, precipitation, air masses, optical phenomena, and wave cyclones. Regional attention to weather patterns, including tornadoes and hurricanes.

GRG 3723. Physiography. (3-0) 3 Credit Hours.

This course provides a study of landforms, the description and interpretation of relief features of the surface of the earth, and the processes and materials that form them and change them over time. Students will be introduced to the impacts of human intervention in landscape-shaping processes. Special emphasis will be placed on the landforms of the Southwestern United States.

GRG 3733. Urban and Regional Analysis. (3-0) 3 Credit Hours.

Applied models of urban and regional growth, structure, interaction, influence, and inequality over space, with emphasis on the United States. Stresses practical skills.

GRG 3743. Biogeography. (3-0) 3 Credit Hours.

The study of the distribution of species and ecosystems in geographic space and over time. Topics may include the prehistoric and historic diffusion of plant and animal species, the global distribution of flora, fauna and soils, the impacts of plants and animals on settlement and globalization, and the consequences of human activity for the biosphere.

GRG 3753. Climate Change. (3-0) 3 Credit Hours.

Examines changes in climatic systems over both short and long time periods, their physical and human causes, and their impacts on physical and ecological systems. Discusses past, present, and future changes in climatic conditions and the methods used to evaluate changes in temperature, precipitation, and other climatic indicators.

GRG 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

GRG 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

GRG 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

GRG 4923. Advanced Research Tutorial. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor and the Department Chair. The tutorial provides students with the opportunity to serve as an apprentice to a professor in order to learn the process of academic research. The student would engage in all aspects of the professor's research project, potentially including data collection, report writing, joint paper presentations or publications, providing ideal preparation for graduate school.

GRG 4933. Internship in Geography. (0-0) 3 Credit Hours.

Prerequisites: Consent of internship coordinator and faculty supervisor. Supervised experience relevant to geography within selected community organizations. A maximum of 6 semester credit hours may be earned through the internship.

GRG 4936. Internship in Geography. (0-0) 6 Credit Hours.

Prerequisites: Consent of internship coordinator and faculty supervisor. Supervised experience relevant to geography within selected community organizations. A maximum of 6 semester credit hours may be earned through the internship.

GRG 4953. Special Studies in Geography. (3-0) 3 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GRG 4983. Research Practicum. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor and the Department Chair. The practicum provides students with the opportunity to focus on a specific research issue having practical applications in geography, governance, politics, or policy. Students participate in a hands-on research experience on the issue in a collective research environment. Potential practicum activities could be related to the Social Research Lab, the Media & Elections Studio, and the GIS Lab, for example.

GRG 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for Honors in Geography during the last two semesters; completion of honors examination and consent of the Honors College. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Geology (GEO)

NOTE: All prerequisites required for Geology (GEO) courses or courses counted toward major or minor requirements in geology must be completed with a grade of "C-" or better.

Geology (GEO) Courses

GEO 1013. The Third Planet. (3-0) 3 Credit Hours. (TCCN = GEOL 1301)

Evolution of ideas concerning the earth's origin, structure, and age; social impact of recognizing the antiquity of the planet and humankind's brief presence; examination of how the distribution of planetary resources influenced the rise and clash of civilizations. May not be applied to a major in geology. May apply toward the Core Curriculum requirement in Life and Physical Sciences.

GEO 1103. Physical Geology. (3-0) 3 Credit Hours. (TCCN = GEOL 1303)

Prerequisites: Completion of or concurrent enrollment in CHE 1103, CHE 1121, and MAT 1093 or higher, or satisfactory performance on placement exam. Completion of or concurrent enrollment in GEO 1111 required. The earth as a dynamic planet; relation of the earth's present processes to its resources, structure, and internal composition. Nature of minerals and rocks, the hydrosphere, tectonics, earthquakes, volcanism, and surface features of the earth. (Formerly titled "Introduction to Earth Systems.").

GEO 1111. Physical Geology Laboratory. (1-3) 1 Credit Hour. (TCCN = GEOL 1103)

Prerequisite: Completion of or concurrent enrollment in GEO 1103. Relation of the earth's present processes to its resources, structure, and internal composition. Field and laboratory study of minerals, rocks, maps, and aerial and satellite photos. Field trips may be required. (Formerly titled "Introduction to Earth Systems Laboratory.").

GEO 1123. Life Through Time. (3-0) 3 Credit Hours. (TCCN = GEOL 1304)

Concurrent enrollment in GEO 1131 recommended. The origin of Earth and the interaction of plate tectonics, mountain building, evolution of the oceans and climate, and the history and development of life from the Archean to the present. May apply toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly titled "Earth History.").

GEO 1131. Life Through Time Laboratory. (1-3) 1 Credit Hour. (TCCN = GEOL 1104)

Prerequisite: Completion of or concurrent enrollment in GEO 1123. Field and laboratory study of fossils and rock sequences; interpretation of earth history. Field trips may be required. (Formerly titled "Earth History Laboratory.").

GEO 2003. Mineralogy. (3-0) 3 Credit Hours.

Prerequisites: CHE 1103, CHE 1121, GEO 1103, GEO 1111, MAT 1093 or higher, or satisfactory performance on placement exam. Completion of or concurrent enrollment in GEO 2011. Crystallography, crystal chemistry, and the physical and optical properties of minerals. Principles of optical mineralogy and the microscopic determination of nonopaque minerals. Field trips may be required.

GEO 2011. Mineralogy Laboratory. (1-4) 1 Credit Hour.

Corequisite: GEO 2003. Laboratory study of crystal models, crystals, and minerals. Use of the petrographic microscope for mineral identification. Field trips may be required. (Formerly GEO 2012. Credit cannot be earned for both GEO 2011 and GEO 2012.).

GEO 2113. Fundamentals of Geographic Information Systems (GIS). (2-2) 3 Credit Hours.

Prerequisite: CS 1173 or equivalent. This course will serve as a basic introduction to the concepts and techniques of utilizing a Geographic Information System (GIS) to study and model environmental issues. In lecture and laboratory, students will study methods of querying, analyzing, creating and displaying GIS data utilizing industry standard software. Students will also be introduced to using the Global Positioning System (GPS) as a means for creating GIS data. (Same as ES 2113. Formerly ES 4043. Credit cannot be earned for more than one of the following: GEO 2113, ES 2113, or ES 4043.).

GEO 3004. Rocks, Fossils, and Global Tectonics. (2-4) 4 Credit Hours.

Prerequisites: GEO 1103 and GEO 1111. An investigation of the major rock forming minerals, petrogenesis of the major rock types, and their plate tectonic context. Study of major trends in fauna and flora through time and their application to interpreting plate tectonics, paleoenvironments, and paleoclimate. Credit may not be applied to a B.S. or B.A. major in Geology.

GEO 3043. Petrology. (3-0) 3 Credit Hours.

Prerequisites: GEO 2003, GEO 2011, MAT 1214, and completion of or concurrent enrollment in GEO 3051. Description, classification, occurrence, and origin of igneous and metamorphic rocks. Field trips may be required.

GEO 3051. Petrology Laboratory. (1-4) 1 Credit Hour.

Prerequisites: GEO 2003, GEO 2011, and completion of or concurrent enrollment in GEO 3043. Laboratory study of igneous and metamorphic rocks in hand specimen and thin section. Field trips may be required. (Formerly GEO 3052. Credit cannot be earned for both GEO 3051 and GEO 3052.).

GEO 3063. Paleontology. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, GEO 1123, GEO 1131, GEO 3123, GEO 3131, or consent of instructor, and concurrent enrollment in GEO 3071. Study of fossil animals and plants. Emphasis on invertebrate animals. Systematics, biostratigraphy, paleoecology, and evolution of fossil organisms. Field trips may be required.

GEO 3071. Paleontology Laboratory. (1-3) 1 Credit Hour.

Prerequisites: GEO 1103, GEO 1111, GEO 1123, GEO 1131, GEO 3123, GEO 3131, and concurrent enrollment in GEO 3063. Study of fossil specimens, collections, and preparation techniques. Field trips may be required.

GEO 3103. Structural Geology. (3-0) 3 Credit Hours.

Prerequisites: GEO 3043, GEO 3051, and completion of or concurrent enrollment in GEO 3111. Response of earth materials to natural stresses. Description and origin of geologic structures. Field trips may be required.

GEO 3111. Structural Geology Laboratory. (1-3) 1 Credit Hour.

Prerequisite: Completion of or concurrent enrollment in GEO 3103. Laboratory study of geologic structures using maps, cross-sections, photographs, and descriptive geometric and stereographic methods. Field trips may be required.

GEO 3112. Geologic Field Investigations. (1-4) 2 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, GEO 1123, GEO 1131, GEO 2003, GEO 2011, and WRC 1023, or consent of instructor. Introduction to techniques for studying geologic features and processes in the field, including rock identification, construction of geological maps, orientation analysis, and report writing. Concurrent enrollment in GEO 4933 or GEO 4943 is not permitted. Some half-day and Saturday field trips may be required. (Formerly GEO 3113. Credit cannot be earned for both GEO 3112 and GEO 3113.).

GEO 3123. Sedimentation and Stratigraphy. (3-0) 3 Credit Hours.

Prerequisites: GEO 1123, GEO 1131, GEO 2003, GEO 2011, GEO 3112, and completion of or concurrent enrollment in GEO 3131. Processes of erosion, transportation, and deposition that form bodies of sedimentary rock. Depositional systems and modeling are a significant area of study. Stratigraphic principles and temporal and spatial facies relationships at various scales. Field trips may be required. (Formerly titled "Sedimentary Geology.").

GEO 3131. Sedimentation and Stratigraphy Laboratory. (1-3) 1 Credit Hour.

Prerequisites: GEO 2003, GEO 2011, and completion of or concurrent enrollment in GEO 3123. Laboratory studies of sedimentary processes and their products. Hand specimens, thin sections, sedimentary structures, and interpretation of depositional environments. Stratigraphic case studies, including surface, subsurface, and sequence stratigraphic analysis. Field trips may be required. (Formerly titled "Sedimentary Geology Laboratory.").

GEO 3143. Economic Geology. (3-0) 3 Credit Hours.

Prerequisites: GEO 2003, GEO 2011, and completion of or concurrent enrollment in GEO 3151. Origin and occurrence of economic natural resources including metallic ore deposits, industrial minerals, and fossil fuels. Field trips may be required.

GEO 3151. Economic Geology Laboratory. (1-3) 1 Credit Hour.

Prerequisites: GEO 2003, GEO 2011, and completion of or concurrent enrollment in GEO 3143. Laboratory study of ore specimens and industrial minerals from important ore localities. Field trips may be required.

GEO 3163. Oceanography. (3-0) 3 Credit Hours.

General oceanography, with emphasis on marine geology and especially the continental margins. An optional field trip may be offered.

GEO 3173. Polar Regions and Climate Change. (3-0) 3 Credit Hours.

This course covers properties, areal distribution, seasonal change and climatic change of the major constituents of the Polar Regions: the large ice sheets of Greenland and Antarctica; seasonal snow cover in the high and mid latitudes; sea ice covers in the Arctic, Southern Ocean and other seas; mountain glaciers from the tropics to the polar regions; and permafrost in the high latitude land areas of the Northern Hemisphere. How to examine these constituents will be presented with illustrative examples of monitoring of climate-induced changes in the Polar Regions using remote sensing and field investigations of processes and properties. Applications discussed will include: snow and ice covers as agents of geological change; snow and ice impacts as water resources in Asia and western North America, and global environmental impact through for example, effects on the earth's radiation budget, and contributions to sea level change. Human impacts covered will include effects of ice covers of rivers and sea ice such as on petroleum extraction, transportation and navigation, frost and freezing damage to crops, and hazards of blizzards and avalanches.

GEO 3374. Geochemistry. (2-4) 4 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, CHE 1103, CHE 1121, and MAT 1093. A survey of geochemical processes and the distribution of elements in the earth. Application of geochemical methods and data to the solution of geologic problems. Includes geochemical laboratory experiments and use of analytical equipment. Incorporates use of standard computer software for analysis of geochemical data and graphing of results.

GEO 3383. General Geophysics. (3-0) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in MAT 1224 and PHY 1623 or PHY 1963. This course examines the interrelated geology and physics of the Earth's interior as deduced from earthquake seismology, gravity and magnetic fields, and the application of geophysical methods to the exploration of near-surface cultural and natural resources. Topics in archeological, environmental, and engineering geophysics will be explored through the methods of refraction seismology, electrical resistivity, electromagnetic induction, microgravity, and ground penetrating radar. Field trips may be required.

GEO 3393. Introduction to Isotope Geochemistry. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, CHE 1103, CHE 1121, and MAT 1093. The course includes a review of theories of nuclear structure, stability of nucleus, nucleosynthesis and origin of elements, and introduces both radiogenic and stable isotope geochemistry. Topics include radioactive decay schemes for tritium-helium, U-Pb, Rb-Sr, Sm-Nd, K-Ar, and U-Th-Pb-He systems; isotopic fractionations of stable isotopes of C, H, O, N, and S; and application of radiogenic and stable isotopes to petrology, evolution of the crust and mantle, geochronology, geothermometry, archaeology, ecology, hydrology, and paleoclimatic interpretation.

GEO 4013. Volcanology. (3-0) 3 Credit Hours.

Prerequisite: GEO 3043 or consent of instructor. A survey of volcanoes and volcanic processes, including historically important volcanic eruptions and the prediction and mitigation of volcanic hazards. Field trips may be required.

GEO 4023. Engineering Geology. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963 (engineering majors only) or PHY 1603 or PHY 1943, and MAT 1214; or consent of instructor. Geologic factors in construction. Geotechnical properties of minerals, rocks, and soils. Case studies. Field trips may be required. (Formerly GEO 3023. Credit cannot be earned for both GEO 4023 and GEO 3023.)

GEO 4063. Environmental Geology. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103 and GEO 1111. An analysis of human interaction with geologic systems; the risks and effects of natural geologic hazards such as volcanic eruptions, earthquakes, and floods. Topics will include the effects of human activity on natural systems such as groundwater quality and recharge, river systems, and coasts. The meaning of "geologic repository" for human waste disposal and how the concept is applied will also be addressed.

GEO 4093. Principles of Remote Sensing. (2-2) 3 Credit Hours.

Prerequisites: MAT 1073 or higher and PHY 1603 or PHY 1943. This course will provide a thorough introduction to remote sensing theory, technology, and application. The emphasis in this course is on understanding the underlying principles of acquiring, interpreting, and applying data from imaging systems covering the electromagnetic spectrum from the ultraviolet through the microwave. (Formerly ES 4093. Credit cannot be earned for both GEO 4093 and ES 4093.)

GEO 4113. Geomorphology. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103 or GRG 2613, or consent of instructor, and junior or senior standing, and concurrent enrollment in GEO 4121. Examination of landforms on the Earth's surface and landscape-forming processes. Field trips may be required.

GEO 4121. Geomorphology Laboratory. (1-3) 1 Credit Hour.

Prerequisites: GEO 1103 or GRG 2613, or consent of instructor, and junior or senior standing, and concurrent enrollment in GEO 4113. Interpretation of landforms and their formative processes from maps, aerial photographs, and calculations. Field trips may be required.

GEO 4623. Groundwater Hydrogeology. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, PHY 1603 or PHY 1943, and MAT 1214. Hydrologic cycle and the occurrence and movement of groundwater. Recharge and discharge of aquifers; water quality; exploration and development of ground-water supplies. Field trips may be required.

GEO 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree in geology.

GEO 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree in geology.

GEO 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree in geology.

GEO 4933. Field Geology Part I. (1-6) 3 Credit Hours.

Prerequisites: GEO 3103 and GEO 3111, or consent of instructor. Part I: Field mapping and measurements. Field trips are required. (Formerly GEO 4946. Credit cannot be earned for both GEO 4933 and GEO 4946.)

GEO 4943. Field Geology Part II. (1-6) 3 Credit Hours.

Prerequisite: GEO 4933 or consent of instructor. Part II: Field mapping and measurements. Field trips are required. (Formerly GEO 4946. Credit cannot be earned for both GEO 4943 and GEO 4946.)

GEO 4951. Special Studies in Geology. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GEO 4952. Special Studies in Geology. (2-0) 2 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GEO 4953. Special Studies in Geology. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GEO 4961. Special Studies in Geology Laboratory. (1-3) 1 Credit Hour.

Prerequisite: Consent of instructor. An organized laboratory course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GEO 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee. Supervised research and preparation of an honors thesis. May be repeated only once with approval.

German (GER)

German (GER) Courses

GER 1014. Elementary German I. (3-2) 4 Credit Hours. (TCCN = GERM 1411)

Fundamentals of German offering the opportunity to develop listening, reading, speaking, and writing skills. Introduction to German culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

GER 1024. Elementary German II. (3-2) 4 Credit Hours. (TCCN = GERM 1412)

Prerequisite: GER 1014, the equivalent, an appropriate placement test score, or consent of instructor. Fundamentals of German offering the opportunity to further develop abilities in listening, reading, speaking, and writing skills. Further exposure to German culture.

GER 2013. Intermediate German I. (3-1) 3 Credit Hours. (TCCN = GERM 2311)

Prerequisite: GER 1024, the equivalent, an appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, reading, speaking, and writing skills. Continued exposure to German culture.

GER 2023. Intermediate German II. (3-1) 3 Credit Hours. (TCCN = GERM 2312)

Prerequisite: GER 2013, the equivalent, an appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, reading, speaking, and writing skills. Continued exposure to German culture.

GER 2333. German Literature in English Translation. (3-0) 3 Credit Hours. (TCCN = ENGL 2331)

Major works of German literature across time, genres, and movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly GER 3333. Credit cannot be earned for both GER 2333 and GER 3333.)

GER 3023. Advanced Language Skills. (3-0) 3 Credit Hours.

Prerequisite: GER 2023 or consent of instructor. Development of oral and written language skills using contemporary readings, media, and oral discourse. Emphasis on increasing fluency through vocabulary expansion activities and selective grammar review. May be repeated for credit when topics vary.

GER 3413. Survey of German Literature and Culture. (3-0) 3 Credit Hours.

Prerequisite: GER 2023 or consent of instructor. Selected works from the medieval period to the 21st century are studied as examples of central movements in German culture and literary history. The course presents the shape of German civilization, emphasizing the major periods, styles, movements, and generations. May be repeated for credit when topics vary.

GER 4003. Topics in German Literature. (3-0) 3 Credit Hours.

Prerequisite: GER 2023 or consent of instructor. Focus on a specific area of German literature, from the medieval period through the 21st century. Selected texts are studied as examples of representative movements, genres, or authors in German literary history. May be repeated for credit when topics vary.

GER 4213. Topics in German Culture and Linguistics. (3-0) 3 Credit Hours.

Prerequisite: GER 2023 or consent of instructor. Focuses on selected topics of cultural history, such as Vienna 1890–1914, Expressionism, contemporary cultural/political developments, or on a linguistic topic. May be repeated for credit when topics vary.

GER 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

GER 4933. Internship in German. (0-0) 3 Credit Hours.

Prerequisite: Permission of Department Chair. Supervised experience in a setting that provides the opportunity to integrate theory and practice in language usage. May be repeated once for credit.

GER 4953. Special Studies in German. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GER 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisite: Consent of the undergraduate advisor. Supervised research and preparation of an honors thesis. May be repeated once for credit, with approval.

Global Affairs (GLA)

Global Affairs (GLA) Courses

GLA 1013. U.S. in the Global Arena. (3-0) 3 Credit Hours.

This course assists students in understanding the context in which United States interacts with the rest of the world and the mutual effects of that relationship. It traces the history and evolution of the United States' involvement in global affairs and why and how what happens in the world matters for the U.S. and vice-versa. Issues to be discussed may include globalization, low politics, international banking, multinationals, health issues, the environment, terrorism, security, food, technology, international communication, and other intermestic issues. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

GLA 2603. Introduction to Global Affairs Studies. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course offers an opportunity for broad study of issues such as North-South and East-West conflicts; international aid and trade through transnational enterprises; economic development and debt; military conflicts and nuclear weapons; new frontiers of oceanic resources, tropical forests, and space; cross-cultural communications; American and foreign values; language issues; and investigations of issues related to a particular nation and culture. (Same as INS 2403 and POL 2603. Credit cannot be earned for GLA 2633, INS 2403 and POL 2603.).

GLA 2633. Comparative Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. A comparative examination of the diverse forms, goals, styles, and practices of government in democratic and authoritarian states. Several major polities will be studied in detail. (Same as POL 2633. Credit cannot be earned for both GLA 2633 and POL 2633.).

GLA 3003. International Law. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course evaluates the ways that international law affects world politics. Emphasis is on the foundations and substantive rules of international law and national politics. Topics may include the laws of war, war crimes, terrorism, human rights, economic exchange and natural resources.

GLA 3013. Introduction to Global Analysis. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. An overview of global conditions and events traditionally subject to analysis by American and international organizations, such as defense and security concerns, economic development, natural resources, human migration, terrorism, arms transfers and weapons proliferation, natural disasters, and international cooperation. Provides an overview of how government and private sector organizations respond and how they engage in defense, diplomacy, intelligence, etc. Discusses the role and operations of analytical functions in government and private organizations. May be taught from different perspectives depending upon faculty expertise and interests. (Same as POL 3273. Credit cannot be earned for both GLA 3013 and POL 3273.).

GLA 3033. International Governance. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. International law, organizations, regimes, hierarchies, and norms such as sovereignty govern the international system. These factors help create a world order that limits armed conflict, regulates the world economy, advances environmental protection, and sets human rights standards. This course explains theories of international governance, and compares these perspectives to the analysis of political scientists on the past record and likely future of world order. (Same as POL 3033. Credit cannot be earned for both GLA 3033 and POL 3033.).

GLA 3043. International Human Rights. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course explores the philosophical and political meaning of fundamental human rights; cases of human rights violations (such as genocide in the Holocaust, Rwanda, Kosovo, and Cambodia; the death penalty; female genital mutilation; violations of workers' rights; and torture); and the role that states, international organizations and individuals can play in ending human rights abuses. Course readings may include contemporary theories of human rights and case studies on the enforcement of rights around the world. (Same as POL 3043. Credit cannot be earned for both GLA 3043 and POL 3043.).

GLA 3063. Comparative Political Participation. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course examines the citizen participation in the democratic process across industrialized democracies, including the United States. The course covers participation within mainstream channels of the democratic process, such as voting and campaign participation, and also participation in unconventional activities such as social movements and protests. (Same as POL 3063. Credit cannot be earned for both GLA 3063 and POL 3063.).

GLA 3103. Research Methods in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course introduces students to a range of methodological approaches relevant to studies of global problems and international relations. Students will study relevant background debates in the philosophy of the social sciences, consider examples of contemporary research designs associated with global problems and international relations, and learn how to craft research questions that address real world challenges. Course may include a range of methodological approaches including quantitative methods (e.g. measures of central tendency and dispersion, regression, and problems of description and inference, etc.), qualitative methods (e.g. comparative case studies, content analysis, and discourse analysis, etc.). Course may require the use of standard computer packages and secondary analysis of data.

GLA 3213. Theories of International Relations. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course provides an overview of theoretical debates and conceptual frameworks for the study of international relations. It examines a range of theoretical models important to explaining how the world works including but not limited to, classical and structural realism, liberalism, global society/complex interdependence/liberal institutionalism, Marxism/dependency, constructivism, and critical theories including feminism and post-modernism. The course also may introduce frameworks for the study of foreign policy decision making such as bureaucratic and organizational politics, and small group politics.

GLA 3223. Theories of Globalization. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course will present the main theories of the phenomena known as “globalization”, attempting to explain its multidimensional nature by looking at the key explanations provided by leading scholars in economics, history, political science, communications, sociology and others. The course will present a wide panorama of key theories and theorists, considering the conventional as well as the critical views on globalization.

GLA 3233. Theories of International Justice. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course explores the nature of justice in a globalized political world. It raises questions such as whether a single standard of justice (e.g., human rights) can legitimately be applied to all cultures across the world, and examines the nature of our obligations to individuals in other countries given the economic and political interdependency of all peoples. Some attention may also be given to particular topics such as immigration policy and the use of foreign military intervention for humanitarian purposes.

GLA 3383. East European Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course provides an overview of politics in Eastern Europe broadly understood as the region of East Central and Southeastern Europe, and the post-Soviet space. It traces the evolution of nation building since the interwar period and the system of communist rule, with a focus on key dimensions of the post-communist transformation of the region. Thematic coverage may include constitutions, political culture, party politics, and Euro-Atlantic integration. (Same as POL 3383. Credit cannot be earned for both GLA 3383 and POL 3383.).

GLA 3393. Latin American Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. An examination of political institutions and their relationship to social and economic change in Latin America. Profiles of major Latin American countries, such as Mexico, Brazil, Argentina, Peru, and Cuba. (Same as POL 3393. Credit cannot be earned for both GLA 3393 and POL 3393.).

GLA 3403. European Governments. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. The interplay of politics with the changing social and economic environment in the advanced industrial societies of Western Europe. Elites, participation, governmental structures, party systems, interest groups, and public policy will be examined in several selected polities and the European Union. (Same as POL 3403. Credit cannot be earned for both GLA 3403 and POL 3403.).

GLA 3433. Governments and Politics of Southeast Asia. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. A comparative examination of the political systems of selected Southeast Asian countries and their efforts to deal with political, economic, and social change. Countries studied may include Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. (Same as POL 3433. Credit cannot be earned for both GLA 3433 and POL 3433.).

GLA 3443. Governments and Politics of East Asia. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. A comparative examination of the political systems of selected East Asian countries and their efforts to deal with problems of political, economic, and social change. Countries studied may include the People’s Republic of China, the Republic of China, and South Korea. (Same as POL 3443. Credit cannot be earned for both GLA 3443 and POL 3443.).

GLA 3453. The Politics of Mexico. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. Background to the contemporary political system of Mexico, including independence, foreign intervention, the Diaz regime, and the 1910–1917 revolution. Other topics may include the constitution, the structure of government, political parties, the presidency, economic development and policy, contemporary leadership, and elites. (Same as POL 3453. Credit cannot be earned for both GLA 3453 and POL 3453.).

GLA 3463. Politics of the Third World. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. The political system of various Third World nations. An inquiry into the political and economic problems of these countries, such as development, instability, and political change. (Same as POL 3463. Credit cannot be earned for both GLA 3463 and POL 3463.).

GLA 3483. International Political Economy. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course is an introduction to the institutions and policies that govern international economic relations. Students will study the development of the international economic system as well as controversies over money, trade, and governance. (Same as POL 3483. Credit cannot be earned for both GLA 3483 and POL 3483.).

GLA 3493. Politics of the Middle East. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. An examination of the past, present, and future of Middle East politics, with an emphasis on culture, politics, religion, and conflicts in the area; the international relations of Middle Eastern countries as well as superpowers’ involvement. (Same as POL 3493. Credit cannot be earned for both GLA 3493 and POL 3493.).

GLA 3503. American Foreign Policy since World War II. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. Major private interests and public institutions involved in American foreign policy making; public opinion and foreign involvement; specific policies toward international organizations and major world regions. (Same as POL 3503. Credit cannot be earned for both GLA 3503 and POL 3503.).

GLA 3513. International Organizations in World Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. Major issues involving international organizations: nationalism and globalism, financing problems, international staffing, voting patterns, peace-keeping, and international conferences. Organizations examined include the United Nations system, regional development banks, alliance systems, cartels, and common markets. (Same as POL 3513. Credit cannot be earned for both GLA 3513 and POL 3513.).

GLA 3523. Force in International Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. An examination of modern research into the use of coercion in international relations, specifically economic sanctions, war, and terrorism. Special emphasis will be placed on the causes, trends, and consequences of interstate wars. Peace movements and the technologies of peace making will also be covered. (Same as POL 3523. Credit cannot be earned for both GLA 3523 and POL 3523.).

GLA 3533. The United Nations. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. The course introduces students to the organization's history, structure, operations, and role in the international system. It examines the historical context of the UN's founding and its functions, processes of institutional reform and change, as well as the successes and failures of the organization, in order to understand more fully the UN's role in contemporary world politics. Topics may include the integration of new issues beyond its traditional focus on peace and security, as well as of new actors, such as nongovernmental organizations and multinational enterprises.

GLA 3543. Diplomacy. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. The course explores the impact of modern diplomacy on global affairs through the conduct of foreign policy and external representation. It highlights the historical and theoretical settings of international negotiations, treaties, alliances, agreements, and the practical ways in which foreign policy is implemented. Topics may include classical diplomacy, international business diplomacy, public diplomacy, multilateral diplomacy, and case studies that examine the complexity and build skills for dealing with global issues.

GLA 3563. Current Issues in World Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. An examination of the issues that divide the people of the world. The structure of contemporary world problems will be studied and possible strategies for the reduction of international conflict will be assessed. Topics may include nuclear proliferation, world hunger, revolution and intervention, transnational enterprises, competing ideologies of international relations, and global ecology. (Same as POL 3563. Credit cannot be earned for both GLA 3563 and POL 3563.)

GLA 3633. Political Economy. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. The political, legal, and ethical context of modern commercial society is explored through the evolution of conceptions of the economy, the individual, and the state. Topics may include the institutional foundations of market societies, ethical and legal impact of business practices, comparisons of national economic policies, the interaction of modern government and economic activity, and the impact of markets on concepts of public and private life. (Same as POL 3633. Credit cannot be earned for both GLA 3633 and POL 3633.)

GLA 3763. Globalization. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course examines normative and empirical issues in globalization debates, such as the role of states and nonstate actors, the emergence of global civil society, patterns of international development, the influence of international integration on security, health, violence, and intercultural toleration, and the status of institutions for global justice. (Formerly INS 3763. Same as POL 3763. Credit cannot be earned for more than one of the following: GLA 3763, INS 3763, or POL 3763.)

GLA 3783. Democracy and World Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course examines theories of democratic transition and focuses on the problematics of democratic change throughout the world. Case studies may include political change after the end of the Cold War in the former Communist states, democratic transitions in Latin America, patterns of change in sub-Saharan Africa, the Middle East, and south Asia. (Same as POL 3783. Credit cannot be earned for both GLA 3783 and POL 3783.) (Formerly titled "Comparative Democratization.")

GLA 3793. Politics and Ethics of International Business. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course will examine theories of international investment, corporation strategy, and measures of international business performance. Topics may include the relationships between corporations, states, and markets, and multinational corporations as actors in trade, finance, social innovation, economic development, and global conflict.

GLA 4003. Comparative Foreign Policy. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course is an in-depth comparative examination of the worldviews, institutional processes, political actors, and outcomes of foreign policy-making of several major nation-states. Themes that may be covered are comparative policies for international security, international governance, economic competition, humanitarian action, and regional crises such as the Middle East and African development. (Same as POL 4003. Credit cannot be earned for both GLA 4003 and POL 4003.)

GLA 4013. The Intelligence Community and Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. Discusses the historical and political developments of intelligence as a component of defense and security policy, mainly in the post-World War II era. Examines the legal foundations of the American national security and intelligence functions, including discussion of accountability and control measures. Emphasizes the role of intelligence in national security policy-making principally conducted by the Executive and Legislative branches in democratic societies. Discusses the main functions of intelligence. (Same as POL 4013. Credit cannot be earned for both GLA 4013 and POL 4013.)

GLA 4123. Research Techniques in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. Examines various techniques for collecting, analyzing, and communicating information by government and private sector organizations engaged in global analysis. Stresses methodologies for analyzing informational inputs, including strengths and weaknesses of various analytical applications. Studies analytic cultures and pathologies associated with information collection and interpretation, legal and political oversight, accommodation of dissenting views in interpretation and policy debate, and economic, political, and cultural implications of analytical findings. Compares and contrasts analytical methods employed by public and private organizations. May be taught from different perspectives depending upon faculty expertise and interests. (Same as POL 4023. Credit cannot be earned for both GLA 4123 and POL 4023.)

GLA 4133. Conflict, Law, and Security in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course offers students an opportunity to closely examine the causes, dynamics, and dilemmas associated with conflict on the modern global stage. Issues under discussion may include intra- and interstate conflicts; nationalism and conflict; economic, social, and political costs and implications of conflict; national and international approaches to conflict resolution, reconstruction, and development; human rights principles and questions of international law and justice; debates about humanitarian interventions; population displacements; the range of security concerns and responses by government actors and institutions; and the viability of nation states in protecting individuals, groups, and institutions of governance.

GLA 4143. The European Union. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course focuses on the historical, political, and intellectual sources of the European Union, the evolution of its institutions, and the effectiveness of its system of governance. Emphasis will be placed on the influence of regional integration on politics and democracy within Europe. The course will consider the construction of united Europe in the context of relations between the EU and member states, European institutions and citizens, and the EU and the world system of politics. (Same as POL 4143. Credit cannot be earned for both GLA 4143 and POL 4143.)

GLA 4203. Current Topics in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. An organized course offering the opportunity for specialized study of topics in such areas as domestic security planning, politics of national defense budgets and products, terrorism, arms transfers and controls, natural disaster preparedness, peacemaking, nuclear weapons proliferation and negotiations, international trade agreements and policies, national security economics, and civil liberties controversies. (Formerly POL 4203. Credit cannot be earned for both GLA 4203 and POL 4203.)

GLA 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: GLA 1013 and Independent Study Course Form signed by the instructor, the student's advisor, the Department Chair, and the Dean of the College of Liberal and Fine Arts. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

GLA 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: GLA 1013 and Independent Study Course Form signed by the instructor, the student's advisor, the Department Chair, and the Dean of the College of Liberal and Fine Arts. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

GLA 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: GLA 1013 and Independent Study Course Form signed by the instructor, the student's advisor, the Department Chair, and the Dean of the College of Liberal and Fine Arts. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

GLA 4933. Internship in Global Affairs. (0-0) 3 Credit Hours.

Prerequisites: GLA 1013 and consent of the internship coordinator and Department Chair. Supervised experience relevant to global affairs within selected community and national organizations. A maximum of 6 semester credit hours may be earned through the internship.

GLA 4936. Internship in Global Affairs. (0-0) 6 Credit Hours.

Prerequisites: GLA 1013 and consent of the internship coordinator and Department Chair. Supervised experience relevant to global affairs within selected community and national organizations. A maximum of 6 semester credit hours may be earned through the internship.

GLA 4953. Special Studies in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

GLA 4973. Seminar in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013. The opportunity for an intensive study of a selected topic. Primary emphasis on supervised research on various aspects of the topic. May be repeated for credit when topics vary, up to an additional 3 credits. Enrollment limited to juniors and seniors majoring in Global Affairs.

GLA 4983. Research Practicum. (0-0) 3 Credit Hours.

Prerequisites: GLA 1013 and permission in writing (form available) of the instructor, the student's advisor, and the Department Chair. The practicum provides students with the opportunity to focus on a specific research issue having practical applications in global affairs. Students participate in hands-on research experience on the issue in a collective research environment. Potential research may be related to the Social Research Lab or Study Abroad programs.

GLA 4993. Honors Thesis. (0-0) 3 Credit Hours.

A minimum grade point average of 3.0 at UTSA, a 3.5 grade point average in the major, and recommendation by a member of the Political Science and Geography faculty. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval. Students who are approved will enroll in the appropriate honors thesis courses during their final two semesters at UTSA. To earn honors, the thesis must be passed by an Honors Committee that will be formed with the recommending faculty and another faculty member. Students interested in enrolling should contact the Department Undergraduate Advisor of Record for additional information.

Greek (GRK)

Greek (GRK) Courses

GRK 1114. Introductory Classical Greek I. (3-2) 4 Credit Hours. (TCCN = GREE 1411)

Fundamentals of Greek grammar and readings in Greek. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

GRK 1124. Introductory Classical Greek II. (3-2) 4 Credit Hours.

Fundamentals of Greek grammar and readings in Greek.

GRK 2113. Intermediate Classical Greek I. (3-0) 3 Credit Hours.

Prerequisite: GRK 1124 or the equivalent. Continued practice in reading Greek prose and poetry. Selections from Plato and Homer. Review of Greek grammar and syntax.

GRK 3113. Selected Greek Authors: Prose. (3-0) 3 Credit Hours.

Prerequisite: GRK 2113 or the equivalent. Reading and in-depth analysis of a particular Greek prose author such as Lysias, Herodotus, Demosthenes, Plato or Isocrates.

GRK 3123. Selected Greek Authors: Poetry. (3-0) 3 Credit Hours.

Prerequisite: GRK 2113 or the equivalent. Reading and in-depth analysis of a particular Greek poet such as Hesiod or Homer, a specific genre such as elegiac or lyric poetry, or a play of the tragedians Aeschylus, Sophocles, and Euripides.

Health (HTH)

NOTE: All prerequisites for Health (HTH) courses must be completed with a grade of "C-" or better.

Health (HTH) Courses

HTH 2133. School Health. (3-0) 3 Credit Hours. (TCCN = TECA 1318)

This course is designed to provide teacher certification students with the opportunity to gain developmentally appropriate knowledge and skills in health and environmental safety. It will address health-related issues in personal, interpersonal, and community settings and creating a safe teaching environment. Offered Spring Semester only.

HTH 2413. Introduction to Community and Public Health. (3-0) 3 Credit Hours.

This course is a survey of the profession of public health and the competencies required of health educators, including examination of philosophies, ethics and current trends. This course serves as a foundation for other courses in the health degree. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences.

HTH 2513. Personal Health. (3-0) 3 Credit Hours. (TCCN = PHED 1304)

Emphasizes the concept of mind, body, and spirit as necessary components of total well-being; principles of preventive health; and self-responsibility for personal health behaviors. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences.

HTH 2601. Field-Based Skills in Community Health and Preventive Services. (1-0) 1 Credit Hour.

Prerequisite: HTH 2413. This course introduces students to practices and skills that are commonly used in community health and preventive health services. These include health screening skills and skills for communicating and interpreting screening results. The course offers hands-on practice of these skills.

HTH 2623. Applied Technology for Research and Health Education. (3-0) 3 Credit Hours.

This course is a survey of common technologies used for health education practice, research, and database management in Community and Preventative Health Services. This course will provide an overview of the major skills and critical issues associated with health education material development, database management, and data reporting for program evaluation.

HTH 3003. Survey of Drugs and Health. (3-0) 3 Credit Hours.

Study of the use and abuse of drugs and other substances. Examines addiction, dependence, tolerance, motivation for use, and effects of substance abuse on health and society.

HTH 3013. Survey of Human Nutrition. (3-0) 3 Credit Hours.

An overview approach to understanding the principles of nutrition and their effect on health and fitness. Emphasis on major nutritional issues throughout the human life cycle; self-evaluation of diet and fitness habits.

HTH 3023. Survey of Human Sexuality. (3-0) 3 Credit Hours.

A study examining the breadth of human sexuality, including psychosocial, cultural and physical aspects, and its impact on our lives.

HTH 3043. Principles of Weight Management. (3-1) 3 Credit Hours.

An in-depth study of the field of prevention and management of obesity. This course provides practical application of nutritional, psychological, and physical activity principles that help individuals manage their own weight and is suitable for students in health, kinesiology, psychology, biology, counseling, or others. A noncompetitive, monitored activity component is required.

HTH 3303. Physical Activity and Health. (3-0) 3 Credit Hours.

Prerequisites: HTH 3503 and HTH 3663. The course provides a survey of the health-related effects and social-cultural and behavioral determinants of physical activity and exercise. Biological/physiological mechanisms for adaptations to physical activity are also addressed.

HTH 3503. Theories of Health Behavior. (3-0) 3 Credit Hours.

Designed to provide an overview of health behavior theories, program planning models and multi-level interventions typically used in public health. Each level of the socio-ecological model will be discussed including individual, interpersonal, organization, community and policy. Directed field experience is required. (Formerly titled "Foundations of Health Theory.").

HTH 3513. Community Health. (3-0) 3 Credit Hours.

Prerequisites: HTH 2413 and HTH 3503. Study of community health problems and the function and organization of public, private, and voluntary health agencies, application of health theories and models and program planning methods. Directed field experience is required. Offered Fall Semester only.

HTH 3523. Worksite Health Promotion. (3-0) 3 Credit Hours.

Prerequisites: HTH 2413 and HTH 3503. Organization, administration, and supervision of health programs in the community, school, business, or industry setting. Application of health theories, models and program planning methods is required. Directed field experience is required. Offered Spring Semester only.

HTH 3533. Drugs and Health. (3-0) 3 Credit Hours.

Prerequisites: Completion of Core science requirements, anatomy and physiology, HTH 2413, HTH 3503, and HTH 3663. Study of the use and abuse of drugs and other substances. Examines addiction, dependence, tolerance, motivation for use, and effects of substance abuse on health and society. Application of theories and models for program development, implementation and evaluation. Health majors and minors only. Offered Spring Semester only.

HTH 3543. Growth and Development. (3-0) 3 Credit Hours.

Physical, social, and psychological development throughout the lifespan. Implications for health professionals at all stages of development (prenatal to death) are addressed. Offered Spring Semester only.

HTH 3553. Emotional Wellness. (3-0) 3 Credit Hours.

Practical application of techniques for shaping healthier emotional behavior; emphasis on personality, stress management, and fulfilling relationships. Offered Fall Semester only.

HTH 3563. Child and Adolescent Health Promotion. (3-0) 3 Credit Hours.

Designed for students who are interested in promoting the health of youth, as well as those students pursuing academic training in education and community health. The primary goal of this course is to improve the health literacy of teachers and health promotion specialists through understanding and application of evidence-based child and adolescent health promotion concepts. Offered Fall Semester only.

HTH 3663. Program Planning and Evaluation. (3-0) 3 Credit Hours.

Prerequisites: HTH 2413 and HTH 3503. This course provides students with a basic understanding of planning, implementing, and evaluating health promotion programs in a variety of settings, including worksite, healthcare, and community and at a various levels (individual, organization, community, policy).

HTH 4503. Human Disease and Epidemiology. (3-0) 3 Credit Hours.

An in-depth look at the etiology, prevention, and treatment of chronic and contagious diseases afflicting humans and epidemiological methods.

HTH 4513. Consumer Health. (3-0) 3 Credit Hours.

Study of the consumer's selection of health products and services; health frauds, scams and quackery; and the acquisition of basic knowledge for making responsible decisions when selecting professional, complementary, or alternative health care services and products. Offered Fall Semester only.

HTH 4523. Understanding Human Sexuality. (3-0) 3 Credit Hours.

Prerequisites: HTH 2413, HTH 3503, and HTH 3663. An in-depth study of human sexuality, including psychosocial, cultural and physical aspects. Application of theories and models for program development, implementation and evaluation. Health majors and minors only. Directed field experience is required. Offered Spring Semester only.

HTH 4533. Nutrition and Health. (3-0) 3 Credit Hours.

Prerequisites: Completion of Core science and mathematics requirements, BIO 2083, BIO 2103, HTH 2413, HTH 3503, and HTH 3663. An in-depth examination of the principles of nutrition and their effects on health and fitness. Emphasis on critical thinking and translation of nutritional knowledge to real-world settings. Includes self-evaluation of diet and fitness habits. Application of health theories and models for program development, implementation, and evaluation in nutritional context. Health majors and minors only.

HTH 4543. Environmental Health and Safety. (3-0) 3 Credit Hours.

Intensive coverage of the aspects of a human being's health and safety in a changing environment. Considers applicable factors of ecology, including problems related to water, waste, pesticides, foods, radiation, population, and other aspects of the total ecosystem, as well as personal and occupational safety within these parameters. Offered Fall Semester only.

HTH 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

HTH 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

HTH 4921. Capstone for Community Health and Preventive Services. (1-0) 1 Credit Hour.

Corequisite: Must be completed the same semester as internship (HTH 4936). This course aids students in synthesizing their classroom and internship experiences to reinforce critical skills and key responsibilities for Health Educators. This course will provide students with an overview of resources, skills, and recommendations regarding their professional development. Students are required to take this course concurrent with HTH 4936.

HTH 4936. Internship in Health. (0-0) 6 Credit Hours.

Prerequisites: Student is required to have a cumulative grade point average of 2.0 or greater and must be within 13 semester credit hours of graduation. The opportunity for work experience in a private or public health-related agency. Opportunities are developed in consultation with the faculty advisor and on-site coordinator. No more than 6 semester credit hours of internship will apply to a bachelor's degree. (Credit cannot be earned for both HTH 4936 and KIN 4936.)

HTH 4951. Special Studies in Health. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study in an area of health not available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

HTH 4952. Special Studies in Health. (2-0) 2 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study in an area of health not available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

HTH 4953. Special Studies in Health. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study in an area of health not available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

HTH 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for honors in the Department of Health and Kinesiology during the last two semesters; consent of the Honors College. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

History (HIS)

History (HIS) Courses

HIS 1043. United States History: Pre-Columbus to Civil War Era. (3-0) 3 Credit Hours. (TCCN = HIST 1301)

From a variety of perspectives, this course will analyze topics covering the geography of North America; pre-Columbian societies; European colonial societies and their transition into the national period; the development of modern economic structures and political traditions; westward expansion; class, race, ethnicity, and gender; cultural diversity and national unity; the relations of the United States to other nations and cultures; and the impact of these trends and issues on the development of the nation. May be applied toward the Core Curriculum requirement in American History.

HIS 1053. United States History: Civil War Era to Present. (3-0) 3 Credit Hours. (TCCN = HIST 1302)

From a variety of perspectives, this course will analyze topics covering the development of the United States as an urban industrial nation; the rising importance of the business cycle, corporations, and immigration; political traditions; class, race, ethnicity, and gender; cultural diversity and national unity; the relationship between the United States and other nations and cultures; and the impact of these trends on the development of the nation. May be applied toward the Core Curriculum requirement in American History.

HIS 2003. Historical Methods. (3-0) 3 Credit Hours.

Prerequisite: WRC 1013. An introduction to the study of history in which students will consider examples and approaches to the problems of research and writing in the field. This course is designed for students completing requirements for a major or minor in history. A minimum grade of "C-" is needed in HIS 2003 to enroll in HIS 4973.

HIS 2053. Texas History. (3-0) 3 Credit Hours. (TCCN = HIST 2301)

An overview of the development of Texas from the era of Spanish exploration and colonization to the modern period, with emphasis on major events in the 19th and 20th centuries. Topics may vary, but generally will include cultural geography, contributions of ethnic minorities and women, the Republic of Texas, statehood, secession, Reconstruction, conservatism, reform, oil exploration, urbanization, and political, economic, and social change in the post-World War II era. May be applied toward the Core Curriculum requirement in American History.

HIS 2123. Introduction to World Civilization to the Fifteenth Century. (3-0) 3 Credit Hours. (TCCN = HIST 2321)

A general introduction to World History from the Late Neolithic to the Columbian Encounter in the late 15th century CE. Broad overview of the pattern of development of major civilizations and their interactions with closer attention given to those events, institutions, beliefs, and practices that involved and affected large numbers of people and had lasting significance for later generations. This course is always offered as a Q-course. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Credit cannot be earned for both HIS 2123 and IDS 2203.)

HIS 2133. Introduction to World Civilization since the Fifteenth Century. (3-0) 3 Credit Hours. (TCCN = HIST 2322)

A general introduction to World History since the late 15th century CE. Broad overview of the pattern of development of major civilizations and their interactions with closer attention to those events, institutions, beliefs, and practices that involved and affected large numbers of people and laid foundations of the modern world. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Credit cannot be earned for both HIS 2133 and IDS 2213.)

HIS 2533. Introduction to Latin American Civilization. (3-0) 3 Credit Hours.

An introduction to Latin America examining the broader topics that shaped its history. These topics may include Native American societies; the encounter between Native Americans, Europeans, and Africans; the post-Independence era; the different paths toward nation-building; the nature of authoritarian regimes; the impact of revolutions; and the cultural development of Latin America and its historiography. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

HIS 2543. Introduction to Islamic Civilization. (3-0) 3 Credit Hours.

An introduction to the role of Islam in world history from the Prophet and the founding of the Umayyad Caliphate to the breakup of the Ottoman Empire. Primary focus will be on the Ottoman Empire, its institutions and culture, and its interaction with Western civilization. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

HIS 2553. Introduction to East Asian Civilization. (3-0) 3 Credit Hours. (TCCN = HIST 2323)

An introduction to East Asian history and culture from antiquity to the beginning of the modern period during the 17th and 18th centuries. The course will cover China, Japan, Korea, and Vietnam, with particular attention to the development of culture, society, and the state in the traditional era prior to the arrival of the West in East Asia. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

HIS 2563. Introduction to European Civilization. (3-0) 3 Credit Hours.

An introduction to the major historical and historiographical problems in the experience of Europe from the earliest times to the present. The course will expose students to a variety of intellectual approaches and to the diversity of European history.

HIS 2573. Introduction to African Civilization. (3-0) 3 Credit Hours.

An introduction to the major historical and historiographical problems in the experience of Africa from the earliest times to the present. The course will expose students to a variety of intellectual approaches and to the diversity of African history. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

HIS 2583. Introduction to South Asian Civilization. (3-0) 3 Credit Hours.

This course explores the history, cultures, religions, and civilization of the Indian subcontinent from earliest times to the present. It begins with prehistory and the Indus civilization, the migration and settlement of the Aryans, the ancient empires of the Maurya and Gupta, and the Islamic conquest. The rise and fall of various Muslim kingdoms of the Mughal Empire, British colonial rule, the nationalist movements and independence of India, Pakistan, and Bangladesh are also discussed. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

HIS 3003. Colonial America and the Formation of American Society. (3-0) 3 Credit Hours.

An examination of the development and transformation of colonial societies in the 17th and 18th centuries, with special emphasis on family and community studies as measures of social change.

HIS 3023. American Independence and National Unity, 1760–1820. (3-0) 3 Credit Hours.

Topics may include origins of the American Revolution, the Revolutionary War, the struggle for unity, and the early years of nationhood.

HIS 3033. The Spanish and Mexican Borderlands. (3-0) 3 Credit Hours.

This course will provide students an opportunity to study Spanish exploration, the colonization of New Spain's northern frontier, and the shift from Spanish to Mexican sovereignty. Topics that may be discussed include Hispanic institutions; customs and traditions; the development of a frontier society; inter-cultural exchanges, conflicts, and negotiations between native societies, Spanish-Mexican settlers, and non-Hispanic European Americans and immigrants; Mexico's struggle for independence; social, cultural, economic, and political trends within the Mexican republic; the westward migration of people from the United States into Mexico's northern frontier; the Texas revolt, and the U.S.-Mexico War.

HIS 3043. History of Women in the United States: Pre-Columbus to 1890. (3-0) 3 Credit Hours.

An examination of how women have been affected by economic, social, cultural, and political structures, with emphasis on the role of class, race, ethnicity, region, and age. Topics may include Native American societies, colonial life, the impact of the American Revolution, the early national period, slavery, the Civil War, westward expansion, and the "cult of domesticity." (Formerly HIS 3473. Credit cannot be earned for both HIS 3043 and HIS 3473.)

HIS 3053. History of Women in the United States: Since 1890. (3-0) 3 Credit Hours.

This course will offer an analysis of women's lives in U.S. history since 1890 and may examine women's role in the Progressive Era, World Wars, the Civil Rights Movement, and the Feminist Movement. It will consider the effects of economic, social, cultural, and political structures on women since 1890, with particular attention to the role of class, race, ethnicity, region, and age. (Formerly HIS 3473. Credit cannot be earned for both HIS 3053 and HIS 3473.).

HIS 3083. History of the American West. (3-0) 3 Credit Hours.

An examination of the American westward movement in the 19th and 20th centuries. Topics may include the conquest and settlement of the territory, the relationship of the new territory to the nation, patterns of economic development, community building, population diversity, and the symbolism of the frontier.

HIS 3093. United States Constitutional History. (3-0) 3 Credit Hours.

Constitutional developments from the formation of the state and federal constitutions to Watergate. Particular attention is paid to the context of judicial decision-making at the Supreme Court level and the impact of those decisions on American life. Complements POL 3323 Constitutional Law I.

HIS 3113. North American Indian Histories. (3-0) 3 Credit Hours.

A history of the American Indian from European contact to the present. Attention is given to the internal cultural, economic, and political developments of the different Indian groups as well as to the European and American developments and policies affecting the Indian. (Formerly titled "The American Indian.").

HIS 3123. Colonial Texas under Spanish and Mexican Rule to 1836. (3-0) 3 Credit Hours.

An overview of Texas history beginning with 16th-century and 17th-century Spanish exploration, with emphasis on 18th-century colonization, and culminating in 19th-century Anglo-American immigration and the sociopolitical changes that resulted in Texas independence.

HIS 3133. Themes in the Social History of the United States. (3-0) 3 Credit Hours.

A survey of social history focusing on the American experience. The course explores changes in the family, work, gender roles, mobility, migration, urbanization, and industrialization, with special attention to class, race, ethnicity, and gender.

HIS 3173. Modern America, 1914–1945. (3-0) 3 Credit Hours.

An examination of the many developments which fundamentally transformed American society between 1914 and 1945. The course examines how these developments reverberated throughout society, affecting all aspects of American life from habits of leisure to patterns of race relations, from the role of women to the style of presidential leadership.

HIS 3183. Law and American Development. (3-0) 3 Credit Hours.

The impact of law from colonial times to the present. Particular attention will be paid to the impact of law on social change, economic growth, and political development.

HIS 3193. The South in American History. (3-0) 3 Credit Hours.

Topics may include development of southern identity, slavery, Civil War and Reconstruction, Jim Crowism, the black experience, and the civil rights movement, with emphasis on the period since 1815.

HIS 3223. The Civil War in the Age of Nationalism. (3-0) 3 Credit Hours.

The U.S. Civil War occurred during an age of violent political upheaval in Europe and the Americas. Grounding the significance of the causes of the Civil War in a transnational context, this course will examine how questions of national self-determination, race, and class the world over influenced the growing differences between the American North and South, as well as the war itself. Setting the Civil War in an international context, this course will enlarge the understanding of the global rise of nationalism in the nineteenth century.

HIS 3243. Europe in the Nineteenth Century. (3-0) 3 Credit Hours.

The course offers a survey of European history from the Congress of Vienna until World War I. Topics may include an examination of the changing scope of international relations, industrial growth and acceleration, the conditions among social groups, and various social and political initiatives among European nations.

HIS 3253. The United States since 1945. (3-0) 3 Credit Hours.

An examination of the social, political, economic, and cultural developments which have shaped life in the United States since World War II. Students will explore the causes and consequences of the country's evolution into a pluralistic, suburban, postindustrial superpower during the last half of the 20th century.

HIS 3263. Seventeenth- and Eighteenth-Century Europe. (3-0) 3 Credit Hours.

A survey of European history under the Ancient Regime to 1789. Examination of the development of and the limits to absolutism, the "crisis" of the 17th century and the Baroque, the rise of science, and the culture of the Enlightenment.

HIS 3273. The Early Middle Ages. (3-0) 3 Credit Hours.

This course will examine culture and society in the West (in what was to be Europe) from Late Antiquity to about A.D. 1000. It will focus on the transformation and survival of old social, political, and cultural forms at the end of the Roman Empire and the emergence of new ones in the successor states of Italy, Gaul, Germany, and Britain.

HIS 3283. Twentieth-Century Europe. (3-0) 3 Credit Hours.

Economic, social, political, and cultural change in Europe since World War I. Topics may include the formation of new political movements (such as social democracy, communism, fascism) between the wars, World War II and its effects, the postwar transformation of Europe, and the Cold War in Europe.

HIS 3293. Imperial Spain. (3-0) 3 Credit Hours.

Iberian history from the evolution of the northern kingdoms to the early 19th century. Topics may include the growth and development of Castile and Aragon, Hapsburg imperialism, the Bourbon reformers, and the collapse of the monarchy and the rise of the Carlist movement.

HIS 3303. History of Mexico. (3-0) 3 Credit Hours.

An overview of Mexican history from the pre-Columbian indigenous civilizations to the present. The course will cover the peopling of Mexico, the conquest, the formation of colonial society, independence, the Mexican American War, the liberal reforms, the Porfiriato, and the Mexican Revolution.

HIS 3313. History of U.S. Relations with Latin America. (3-0) 3 Credit Hours.

A survey of U.S. relations with Latin America from the Monroe Doctrine to the present. General topics may include the Monroe Doctrine, Manifest Destiny, gunboat diplomacy, the Good Neighbor Policy, the Cold War, and the Alliance for Progress. Specific themes include U.S. reactions to revolutions, authoritarian regimes, and reformist governments.

HIS 3323. Latinas and Latinos in the United States to 1890. (3-0) 3 Credit Hours.

This course surveys the origins of Latinas and Latinos in the United States from the point of contact between indigenous people and Spanish colonizers to 1890. Thematic topics may include conquest, Spanish colonization, the development of borderlands cultures, migratory and settlement patterns, and labor. While the course will end at a time when the U.S. is emerging as a global industrialized nation, much of it covers a time period prior to the foundation of the U.S. as a nation state, thus demonstrating the deep histories of Latinas and Latinos tied to this land.

HIS 3333. Latinas and Latinos in the United States from 1890 to Present. (3-0) 3 Credit Hours.

This course surveys the history of Latinas and Latinos in the modern United States from 1890 to the present. Covering the period of the greatest migratory flows into the United States from points all over Latin America, especially from Mexico, Cuba, and Puerto Rico, this course will address the development of transnational communities and regional identities within the U.S. Emphasis will be placed on the dialectic between immigration and historically rooted communities, the formation of varied racial and class based identities, and the dynamic geographies of Latinas and Latinos.

HIS 3353. Latin America since Independence. (3-0) 3 Credit Hours.

The course will emphasize the 19th and 20th centuries and may include the following topics: the breakdown of colonialism; the problems of independence; neocolonial development; the impact of the Depression; industrialization and urbanization; and the importance of nationalism, socialism, fascism, communism, and revolution in the contemporary era.

HIS 3373. Revolution in Latin America. (3-0) 3 Credit Hours.

An analysis of the role colonial legacies played in 19th- and 20th-century social and political violence. Case studies may include Mexico, Bolivia, Cuba, Chile, and Nicaragua.

HIS 3403. Pre-Hispanic and Colonial Latin America. (3-0) 3 Credit Hours.

An analysis of the pre-Columbian Indian civilizations, the Spanish conquest, and the Spanish and Portuguese colonial societies of the New World.

HIS 3423. United States-Mexico Border. (3-0) 3 Credit Hours.

This course will examine social, economic, and political conditions shaping the character of the United States-Mexico borderlands. Using a transnational approach, students will have an opportunity to explore the history of the border as a multi-cultural region, and to examine issues relevant to the development of the border area. Topics of interest may include urbanization; industrialization; constructions of race, ethnicity, class, gender, and nationality; trade; migration; security; and ecological problems.

HIS 3433. The Emergence of Modern America, 1877–1914. (3-0) 3 Credit Hours.

An examination of social and political responses to the industrial revolution in the United States.

HIS 3453. History of Medicine in America. (3-0) 3 Credit Hours.

The course examines the social and cultural history of health and healing in the United States. By contextualizing the history of health, healthcare, patient stories, disease, and professional development, it provides analytical skills necessary to better evaluate the place of medicine in modern American culture. The particular focus of the course may vary by semester to more closely examine such historical topics as: women and health; rise of the medical profession; technology and medicine; popular culture and health history; and medicine and film.

HIS 3463. History of Religion in the United States. (3-0) 3 Credit Hours.

This course examines Puritanism, disestablishment, the First and Second Great Awakenings, religion and the Civil War, the Social Gospel, urban revivalism and religion, the growth of evangelical Protestantism, and religion in modern America. Special thematic concentrations may include church-state relations, the role of race and ethnicity in American religion, Catholicism and African American religions.

HIS 3493. History of San Antonio. (3-0) 3 Credit Hours.

Topics may include the cultural origins of colonial San Antonio; political, economic, and social development; and the effects of urbanization on local ethnic communities.

HIS 3513. Warfare in the Premodern World. (3-0) 3 Credit Hours.

A comparative study of military change in the ancient, medieval, and early modern world (to 1815 and the end of the Napoleonic Wars). The course examines such controversies as the Military Revolution and the Fiscal-Military State and describes how societies in Europe, Asia, Africa, and the Americas organized, trained, and provisioned military forces, developed tactics and strategies of war, and how their military organization impacted state-society relations and their struggles for survival or imperial expansion.

HIS 3523. European Cultural History. (3-0) 3 Credit Hours.

Introduction to various aspects of the European cultural heritage focusing on the interaction between society and culture. Topics may include popular culture, the arts, philosophy, science, social theory, ideology, and mass media. Course content may include discussions of sexuality and graphic visual materials suitable for an adult audience.

HIS 3543. History of Modern Warfare. (3-0) 3 Credit Hours.

Survey of the major developments in the history of war since the Napoleonic era. Analyses of the social, economic, and political context in which wars have occurred. Topics may include emergence of new forms of weaponry, strategy, logistics, and tactics.

HIS 3553. Civil War America. (3-0) 3 Credit Hours.

This course explores the Civil War era in American history, beginning by tracing the causes of the Civil War, including the role that the economics of slavery played in the conflict. It studies the war itself, examining the social, cultural, and military aspects of the war. The course concludes with an examination of the attempts to reconstruct the Union in the years after the Confederate surrender.

HIS 3563. African American History to the Civil War. (3-0) 3 Credit Hours.

A survey of the social, economic, political, and cultural history of African Americans from the time of contact with European slave traders until the Civil War. The course will examine the process by which millions of Africans were taken from their homelands, enslaved, and transported to America, where they were gradually, and often violently, transformed into Americans. While the course will focus on the United States, it will also consider how the experiences of Blacks in America relate to the history of the peoples of the African diaspora.

HIS 3573. African American History since the Civil War. (3-0) 3 Credit Hours.

This course surveys the African American experience from emancipation to the present, focusing on political, economic, cultural, and social developments. The course will utilize both traditional historical methodology, with its emphasis on chronology and the examination of documents and alternative interdisciplinary methodologies, which analyze nontraditional sources such as film, music, and oral interviews.

HIS 3603. Occupation, Revolution and Nation in Africa. (3-0) 3 Credit Hours.

This course focuses on political and social change in Africa after 1800, a particularly tumultuous and often violent period in African history. Working from an African perspective, students will explore events and historical processes that were often triggered by external forces. The course examines the ways in which historical themes—conquest, resistance, revolution, nationalism, identity politics—play out in an African context. (Formerly titled "Africa in Colonial and Post-Colonial Contexts.").

HIS 3613. Migration, Society and Culture in Africa. (3-0) 3 Credit Hours.

Examination of political and social organization in African societies. The emphasis is on Africa prior to colonization. Topics will include regional trading networks, slavery, the range of political/governmental structures, cultural variation (including categories of gender and generation), and African relations with other parts of the world. (Formerly titled "African Politics, States, and Empires.").

HIS 3623. History of the Civil Rights Movement. (3-0) 3 Credit Hours.

An examination of the struggle for civil rights in the United States from the conclusion of the Civil War to the present. While particular attention will be paid to the movement by Black southerners for equal rights, the course will also consider the struggle for civil rights conducted by other racial minorities in the United States.

HIS 3633. Early Modern England, 1485–1760. (3-0) 3 Credit Hours.

English history in the Tudor, Stuart, and early Hanoverian eras emphasizing the growth of the national state, the overseas expansion of England, and preindustrial social and economic change.

HIS 3723. The High Middle Ages and the Early Renaissance. (3-0) 3 Credit Hours.

This course will examine the cultural, political, and social achievements of High Medieval Europe, with particular reference to France, Germany, and Italy. It will then focus on the great crisis of the 14th century and the emergence of a new, antimedieval culture in Early Renaissance Italy to about 1450.

HIS 3733. Europe in the High Renaissance and Reformation. (3-0) 3 Credit Hours.

This course will study the cultural, social, and political developments of Italy and Northern Europe in the time of the High Renaissance and the Reformation (ca. 1450–1550).

HIS 3743. Imperial Russia. (3-0) 3 Credit Hours.

The development of Russia from the accession of Peter the Great to the outbreak of the Russian Revolution.

HIS 3753. The Soviet Union and After. (3-0) 3 Credit Hours.

The evolution of Russia from the revolution of 1917 to the present. A critical analysis of the construction and decline of a socialist society in the Soviet Union and the relationship of 20th-century Russia to the outside world.

HIS 3763. Russia before Peter the Great. (3-0) 3 Credit Hours.

An examination of the Russian state-building process in the period from the Mongol Yoke to the formation of the Russian Empire, focusing on the development of autocracy, serfdom, and the state service system and examining Russia's relations with Europe and Asia.

HIS 3773. The Age of the Baroque. (3-0) 3 Credit Hours.

This course will examine the formation of a Post-Renaissance culture in Europe, with the emergence of Mannerism and the Baroque, and the rise of science. It will also study the struggles for religious and political mastery on the continent from roughly the Peace of Augsburg (1555) to the end of the Thirty Years' War (1648), in the context of economic, social, and political change.

HIS 3803. World History in the Cinema. (3-0) 3 Credit Hours.

An analysis of several classic films to introduce for closer critical study important events and issues in world history which have intrigued film makers and their audiences as well as historians. Exploration of the similarities and differences between artistic and historical imagination. (Formerly HIS 2073. Credit cannot be earned for both HIS 3803 and HIS 2073.).

HIS 3813. American Political History. (3-0) 3 Credit Hours.

A study of American political history from the 18th century to the present. Deals with presidents and major national developments and may consider such topics as federalism, state politics, voting behavior, party systems, and political realignment.

HIS 3823. History of American Foreign Relations. (3-0) 3 Credit Hours.

This course examines the emergence of the United States as a world power and its subsequent activities in world affairs. The course places particular emphasis on the domestic roots of U.S. activity, the factors shaping perceptions of international affairs, and the causes and consequences of international conflicts involving the United States.

HIS 3843. Migration and History. (3-0) 3 Credit Hours.

What has caused people to migrate as individuals and as groups? To what extent has geographical mobility been a function of economic mobilization, political transformation, social upheaval, and/or technological revolution? How has the migratory process, in turn, affected the migrants themselves, both in their place of origin, and in the host society? Specific theme, regional focus, and time period may vary according to the instructor's choice of examples drawn from a variety of historical situations.

HIS 3863. Global History of World War I. (3-0) 3 Credit Hours.

This course examines the First World War in Europe and beyond. Topics may include the war's origins, the competing strategic interests of the Great Powers, the impact of the war on Russia, Africa, and the Middle East, the experience of soldiers at the front and civilians at home, and the cultural consequences of war.

HIS 3873. History of World War II in Europe. (3-0) 3 Credit Hours.

This course examines the origins and impact of World War II in Europe. While multiple theatres of war are considered, this is not a military history course. Instead, the focus is primarily on the war's impact on civilian populations and the manner in which the conflict transformed the economic, social, and political realities of domestic life for the major combatants.

HIS 3903. Modern Japan. (3-0) 3 Credit Hours.

An overview of Japanese history since the end of the 16th century. Topics may include the Tokugawa period of early modern history, the Meiji transformation of state and society, the rise of Japanese militarism leading up to the Pacific War, the American occupation, and the subsequent rebirth of Japan into a global economic giant.

HIS 3913. Late Imperial China. (3-0) 3 Credit Hours.

Chinese history from the late Ming (ca. 1550) to the end of the Qing dynasty in the 1911 Revolution. The course will address the nature of imperial institutions, state-society interaction, economic developments, social and cultural changes, and China's relationship with the outside world.

HIS 3923. China in Revolution. (3-0) 3 Credit Hours.

A study of 20th-century China. The course will analyze and characterize the different phases of revolutionary changes in China and examine the sources of its revolutionary impulse.

HIS 3943. History of India. (3-0) 3 Credit Hours.

This course questions the extent to which South Asia is an outcome of its traditional structure (religion, caste hierarchy, joint families, village communities), and how much it is a product of global historical forces including colonialism, capitalism, feminism, and globalization. It examines politics and cultures of South Asia, with emphasis on the freedom struggle, the rise of the Congress and the Muslim League, the two-nation theory, partition and independence, the untouchables, and other contemporary issues including globalization and diaspora. (Formerly titled "Modern India, Pakistan, and Bangladesh.").

HIS 3953. Cultures and Empires of the Silk Road, 700 BCE – 1480 CE. (3-0) 3 Credit Hours.

An examination of the political, military, economic, and cultural interaction of nomadic and sedentary peoples along the northern Silk Road running from Western China through Central Asia to the Black Sea Steppe. Topics may range from the formation of the first powerful nomadic tribal confederations (Scythians, Sarmatians, Huns) in the Iron Age and culminating with the rise of the great Gunpowder Empires of the Ottomans, Timurids, and Moscow tsars in the 14th and 15th centuries.

HIS 3963. Women and Gender in India. (3-0) 3 Credit Hours.

This course examines the history of women in the Indian subcontinent from colonial times under British rule to modern independent India. Topics to be discussed and studied include the dowry system, colonial reform movements, education for women, special challenges for Muslim, Christian, and low-caste women, and the nationalist struggle for independence.

HIS 3973. Muslim South Asia: India, Pakistan, Bangladesh. (3-0) 3 Credit Hours.

This course addresses the development and rise of Muslim nationalism in the Indian subcontinent. Under British colonial rule, Muslims in South Asia began to emerge as a political community, ultimately demanding self-rule under the sovereignty of Pakistan. After a chaotic Partition with India in 1947, Pakistan struggled to achieve cohesion across lines of region, language, and ethnicity. A civil war in 1971 led to the formation of the independent nation of Bangladesh. The class may consider topics of history, culture, gender, class, religion, and economic development for Muslims in South Asia, along with issues of contemporary interest in the region.

HIS 3983. Women and Gender in Latin America. (3-0) 3 Credit Hours.

This course examines the role of gender in Latin American history, particularly with respect to the lives of ordinary women. Topics that may be discussed include exploring the changing roles of women over time to see how colonialism and imperialism, the rise of capitalism, and the existence of race/ethnicity and class hierarchies impacted women's social, economic and political roles. Throughout the course, we will be sensitive to how gender norms informed the ways women and men exercised power as well as the forces that constrained them from using power.

HIS 4133. History and the Public. (3-0) 3 Credit Hours.

Investigation of the status, uses, and value of history in schools and universities, and in other spheres of life. Special interests include public and private roles of scholars and intellectuals, forms of public history, literary and cinematic uses of history, public policy applications, history as social and cultural criticism, and alternative conceptions of history and historians' work.

HIS 4143. History Standards and Their Public Reception. (3-0) 3 Credit Hours.

This course, intended especially for majors pursuing certification to teach History in the public schools, examines the continuing debate about the articulation of standards for United States and World History instruction in primary and secondary schools. It offers students the opportunity to review the range of specific skills and understandings professional historians have tried to represent in History education. It further identifies the external expectations and pressures upon History instruction in the current day as well as the past.

HIS 4223. Environmental History of the United States. (3-0) 3 Credit Hours.

An introductory survey of the interaction of human beings and the environment in the United States from early Indian occupancy to the present. Topics may include problems of ecological change, climate, energy, population, conservation, and human ideas and uses of nature.

HIS 4233. American Society in the 1960s. (3-0) 3 Credit Hours.

This course examines the political, cultural, and social developments that shaped American society in the 1960s. Topics will include the emergence of movements for social change, the expansion of the welfare state, the growth of the counterculture, and the Americanization of the war in Vietnam. The course will invite students to move beyond the stereotypes of the 1960s and to explore how different people responded to, participated in, and experienced the changes that occurred in American society during this turbulent decade.

HIS 4603. Issues in History. (3-0) 3 Credit Hours.

Coverage of topics of current interest in the field of history. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree. (Formerly HIS 4923.).

HIS 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

HIS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

HIS 4933. Internship in History. (0-0) 3 Credit Hours.

Prerequisites: HIS 2003 and consent of Department Chair. Supervised experience relevant to history within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in History. Must be taken on a credit/no-credit basis.

HIS 4953. Special Studies in History. (3-0) 3 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

HIS 4973. Seminar in History. (3-0) 3 Credit Hours.

Prerequisite: HIS 2003 with a minimum grade of "C-". The opportunity for an intensive study of a selected topic. Primary emphasis on supervised research on various aspects of the topic. Enrollment limited to juniors and seniors majoring in history.

HIS 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for Honors in History during their last two semesters; and/or completion of honors examination and consent of the Honors College. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Honors (HON)

Honors (HON) Courses

HON 2201. Honors Community Service. (0-0) 1 Credit Hour.

Prerequisite: Enrollment in the Honors College or consent of instructor. Supervised community service experience relevant to an Honors education. May be repeated for credit, but not more than 3 semester credit hours will apply to a bachelor's degree.

HON 3021. Honors Essay Writing. (0-0) 1 Credit Hour.

Prerequisites: WRC 1013 and WRC 1023, enrollment in the Honors College, and consent of instructor. A special Honors course designed to allow students to receive credit for work on writing essays for competitions. Involves substantial rewriting. May be repeated for credit, but not more than 3 semester credit hours will apply to a bachelor's degree.

HON 3223. Honors Seminar in Social & Behavioral Sciences. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Interdisciplinary seminar that explores broad topics and themes in the social and behavioral sciences. May be repeated for credit when topics vary.

HON 3233. Honors Seminar in Arts & Humanities. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Interdisciplinary seminar that explores broad topics and themes in arts and humanities. May be repeated for credit when topics vary.

HON 3243. Honors Seminar in Business & the Professions. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Interdisciplinary seminar that explores broad topics and themes in business and the professions. May be repeated for credit when topics vary.

HON 3253. Honors Seminar in the Sciences. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Interdisciplinary seminar that explores broad topics and themes in the sciences. May be repeated for credit when topics vary.

HON 3301. Graduate School Workshop. (1-0) 1 Credit Hour.

Prerequisite: Enrollment in the Honors College or consent of instructor. A special workshop designed to prepare undergraduate students for admission to graduate school, with special emphasis on admission to Ph.D. programs. Topics include selecting a graduate program, preparing an application packet, writing the personal statement, and preparing for the Graduate Record Examination.

HON 3501. Honors Capstone Exploration. (1-0) 1 Credit Hour.

Prerequisite: Enrollment in the Honors College or consent of instructor. Course designed to help students develop an understanding of what a thesis project is, what resources are necessary to complete the project, and identify a topic and a faculty thesis advisor. Students are encouraged to take this course in the first semester of their junior year. (Formerly titled "Honors Thesis Exploration Seminar.").

HON 3513. Policy-Making Process. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the UT System Archer Fellows Program. This course will focus on the role of Congress and the President in the policy-making process. The course will use a variety of sources (academic texts, newspaper and journal articles, Web sites, blogs, advocacy papers) to compare textbook and "real world" versions of how policy is made in Washington, D.C.

HON 3523. Beyond Congress and the White House. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the UT System Archer Fellows Program. This course is designed to help students understand power in our nation's capital and, especially, power that lies outside Congress and the White House. Students will study Washington, D.C., by making visits to local sites, as they examine complex issues, such as the use of DDT to combat malaria, the relationship between democracy and war, and the future of the Internet.

HON 3533. Advocacy in Applied Settings. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the UT System Archer Fellows Program. This course will provide an introduction to the issues individuals face when placed in the role of being advocates for an issue, idea, or even themselves. The goal of the course is for students to learn about advocacy in ways that they can apply to their internship settings.

HON 4913. Honors Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Independent reading, research, and writing under the direction of a faculty member. Designed as preparation for completion of an Honors Thesis. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

HON 4933. Honors Internship. (0-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Supervised experience in a professional setting that provides the opportunity to integrate theory and practice programs relevant to the student's degree program and honors experience. May be repeated for credit in a subsequent semester, but not more than 6 semester credit hours of internship will apply to a bachelor's degree.

HON 4936. Honors Internship. (0-0) 6 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Supervised experience in a professional setting that provides the opportunity to integrate theory and practice programs relevant to the student's degree program and honors experience. May be repeated for credit in a subsequent semester, but not more than 6 semester credit hours of internship will apply to a bachelor's degree.

HON 4941. Honors Leadership. (0-0) 1 Credit Hour.

Prerequisite: Enrollment in the College of Business Leadership Challenge program. Supervised leadership experience relevant to an Honors education. Usually involves planning and designing experiences for new Honors students.

HON 4993. Honors Capstone Project. (0-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Supervised research and preparation of an Honors Capstone project for the purpose of earning Highest Honors. May be repeated once for credit. (Formerly titled "Honors Thesis.").

Humanities (HUM)

Humanities (HUM) Courses

HUM 1203. Medical Humanities and Ethics. (3-0) 3 Credit Hours. (TCCN = HUMA 1301)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. The practice of medicine has long been considered both an art and a science. Through examination of texts in the medical humanities and health care ethics, this course explores the art of medicine, the meaning of illness, and what it means to practice medicine, which includes the interrelationship of professional identity formation and ethics.

HUM 2023. Introduction to the Humanities I. (3-0) 3 Credit Hours. (TCCN = HUMA 1301)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. An introductory survey of the important aesthetic works, ideas, social structures, and other cultural productions of Western Civilization from the Paleolithic through the Medieval eras. This course will employ an interdisciplinary approach designed to acquaint students with major cultural modes in Western Civilization with a particular focus on aesthetic works and the dominant critical approaches used to address them. May be applied toward the Core Curriculum requirement in Creative Arts.

HUM 2033. Introduction to the Humanities II. (3-0) 3 Credit Hours. (TCCN = HUMA 1302)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. An introductory survey of the important aesthetic works, ideas, social structures, and other cultural productions of Western Civilization from the Renaissance through the Present. This course will employ an interdisciplinary approach designed to acquaint students with major cultural modes in Western Civilization with a particular focus on aesthetic works and the dominant critical approaches used to address them. May be applied toward the Core Curriculum requirement in Creative Arts.

HUM 2053. History of Film. (3-0) 3 Credit Hours. (TCCN = HUMA 1315)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. An introductory survey of the history, criticism, and cultural importance of film in Western Culture. This course will focus on the development of film as a medium for cultural production including a comparative analysis between film and other cultural media such as literature, drama, and the visual arts. May be applied toward the Core Curriculum requirement in Creative Arts.

HUM 2093. World Religions. (3-0) 3 Credit Hours. (TCCN = PHIL 1304)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of the origins, teachings, development, and philosophical foundations of the world's chief religious movements, such as Hinduism, Buddhism, Shintoism, Confucianism, Taoism, Sikhism, Jainism, Islam, Zoroastrianism, Judaism, and Christianity. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly HUM 3093. Credit cannot be earned for both HUM 2093 and HUM 3093.).

HUM 3013. History of Ideas. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Survey of the development and influence of major philosophical, scientific, and aesthetic conceptions from ancient times to the present.

HUM 3023. The Medieval World. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Interdisciplinary investigation of medieval thought and culture as exemplified in major works of literature, philosophy, theology, and history.

HUM 3033. Renaissance Ideas. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Interdisciplinary investigation of Renaissance thought and culture, as exemplified in major works of literature, philosophy, history, theology, and fine arts.

HUM 3043. Classicism and Enlightenment. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Interdisciplinary investigation of thought and culture in the later 17th and the 18th centuries, as exemplified in major works of philosophy, literature, and the fine arts.

HUM 3053. The Romantic Age. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Interdisciplinary investigation of the development of ideas in literature, philosophy, art, politics, and society at the end of the 18th and beginning of the 19th century.

HUM 3063. The Modern World. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Interdisciplinary investigation of modern thought in the late 19th and 20th centuries, as exemplified in major works of philosophy, literature, and the fine arts.

HUM 3103. American Film. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Survey of the art, history, development, and major critical approaches to American film with attention to such topics as classic and revisionist film styles, cinematic apparatus, the history and development of film genres, and film as a part of American culture.

HUM 3203. Film Genres. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Intensive study of a particular film genre, such as Western, science fiction, film noir, or documentary. May be repeated for credit when topics vary.

HUM 3213. The Christian Classics. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. The opportunity for an intensive survey of selected works of writers studied in the context of Christian thought.

HUM 3223. The Bible as Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in literature. Offers the opportunity to survey major themes, stories, and motifs in the Old and New Testament, with emphasis on those elements fundamental to Western culture.

HUM 3303. Major Filmmaker. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Intensive study of the work of a particular major filmmaker, such as Alfred Hitchcock, Akira Kurosawa, Orson Welles, Charles Chaplin, or Ingmar Bergman. May be repeated for credit when topics vary.

HUM 3403. Literature into Film. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of what distinguishes and links the media of cinema and written literature. Case studies in adaptation of novels, short stories, and plays into film.

HUM 3623. Topics in National Cultures and Civilizations. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. The cultural life of the respective geographic regions and social strata of individual nations of Europe and America, as reflected in and interpreted by their artistic production. Individual topics may focus on a single nation or several nations. May be repeated for credit when topics vary.

HUM 3703. Topics in Popular Culture. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Intensive study of a particular period (e.g., the '20s, the '60s, the Middle Ages), medium (e.g., television, hip hop, radio), or event (e.g., 9/11, the Alamo, Kennedy assassination) as shaped by and shaper of the popular imagination. May be repeated for credit when topics vary.

HUM 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

HUM 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

HUM 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

HUM 4953. Special Studies in Humanities. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

HUM 4973. Senior Seminar in Humanities. (3-0) 3 Credit Hours.

Prerequisites: 12 upper-division semester credit hours in humanities, classics, or philosophy. Undergraduate seminar limited to students in the humanities emphasis in their senior year. Content varies with each instructor. May be repeated once for credit when topics vary. (Formerly titled "Seminar for Humanities Majors.")

HUM 4991. Honors Thesis. (0-0) 1 Credit Hour.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee; enrollment in or completion of HUM 4973. Supervised research and preparation of an Honors Thesis for the purpose of earning Humanities Honors. May be repeated once with advisor approval.

HUM 4992. Honors Thesis. (0-0) 2 Credit Hours.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee; enrollment in or completion of HUM 4973. Supervised research and preparation of an Honors Thesis for the purpose of earning Humanities Honors. May be repeated once with advisor approval.

HUM 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee; enrollment in or completion of HUM 4973. Supervised research and preparation of an Honors Thesis for the purpose of earning Humanities Honors. May be repeated once with advisor approval.

Information Systems (IS)

Information Systems (IS) Courses

IS 1022. Programming and Formal Logic. (2-0) 2 Credit Hours.

An introduction to the elements of modern formal logic and program semantics. Modern formal logic uses symbolic techniques for an analysis of validity, and related notations such as grammatical form and truth. This course addresses logical notations (syntax) and how to assign meaning to them (semantics), which are essential for an understanding of many aspects of contemporary philosophy, mathematics, and informal processing. (Formerly IS 1023. Credit cannot be earned for both IS 1022 and IS 1023.)

IS 1403. Business Information Systems Fluency. (3-0) 3 Credit Hours. (TCCN = BCIS 1305)

Required course for all students majoring in Business at UTSA. This three-unit course concentrates on a set of core computing skills that are essential to student success, such as using e-mail, word processing, spreadsheets, basic data management, presentation software and on- and off-campus Internet resources. This is a Web-based course. Instructions and exams are accomplished through the use of a computer.

IS 1503. Introduction to Cyber Security. (3-0) 3 Credit Hours.

An introduction to the principles and best practices for cyber security. This course addresses the fundamental aspects of computer and network security. Issues concerning home computer security, internet security, privacy, viruses and worms, spam, and ethics will be included in this course. Public Component software will be used to illustrate the principles discussed in the class.

IS 2031. Introduction to Programming Concepts Laboratory. (0-2) 1 Credit Hour.

Prerequisite: Concurrent enrollment in IS 2033, or completion of an IS 2033 equivalent with a grade of "C-" or better. Laboratory accompanies IS 2033. Uses object-oriented programming language and software development tools to develop basic applications that underline the concepts learned in IS 2033. (Formerly titled "Introduction to Computer Concepts for Information Systems Laboratory.")

IS 2033. Introduction to Programming Concepts. (3-0) 3 Credit Hours.

Prerequisites: IS 1403 with a grade of "C-" or better and concurrent enrollment in IS 2031. An introduction to programming with an object-oriented language. Addresses basic elements of OOP (object-oriented programming), including control structures, classes and objects, class behavior, arrays, GUIs (graphical user interfaces), file input/output, exception handling, and object-oriented design. (Formerly titled "Introduction to Computer Concepts for Information Systems.")

IS 2041. Intermediate Object-Oriented Programming Laboratory. (0-2) 1 Credit Hour.

Prerequisite: Concurrent enrollment in IS 2043, or completion of an IS 2043 equivalent with a grade of "C-" or better. Laboratory accompanies IS 2043. Laboratory uses object-oriented programming language and software development tools to develop basic applications that underline the concepts learned in IS 2043. (Formerly titled "Data Structures and File Processing Laboratory.")

IS 2043. Intermediate Object-Oriented Programming. (3-0) 3 Credit Hours.

Prerequisites: IS 2031 and IS 2033 with a grade of "C-" or better and concurrent enrollment in IS 2041. An object-oriented programming course designed to enforce introductory object-oriented principles learned in IS 2033 and focus on concepts including exception handling, data structures, searching and sorting, recursion, generic collections, file processing, and GUIs (graphical user interfaces). An object-oriented language like Java will be used to develop applications using these concepts. (Formerly titled "Data Structures and File Processing.")

IS 3003. Principles of Information Systems for Management. (3-0) 3 Credit Hours.

Prerequisite: IS 1403 with a grade of "C-" or better. An analysis of managerial/organizational information needs. Systematic procedures for developing information systems are covered. Includes coverage of hardware and software tools, information structures, and formal problem-solving techniques. Issues related to organizational controls, security, and globalization as a result of changing technologies are discussed. Cases will be assigned to illustrate the use of specific tools and techniques for problem solving.

IS 3033. Operating Systems. (3-0) 3 Credit Hours.

Prerequisites: IS 2041 and IS 2043 with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. This course examines the role of computer operating systems in the overall vulnerability of the network. A comparison of the more popular operating systems will be used to illustrate the concepts to the class.

IS 3043. Mobile Application Development. (3-0) 3 Credit Hours.

Prerequisites: IS 2041 and IS 2043 with a grade of "C-" or better. As mobile devices such as smartphones and tablets become ubiquitous, the demand for developers who specialize in mobile technology also surges. This course will cover the fundamental design principles, programming techniques, and user experience considerations underlying mobile apps and their development environments. To bring these concepts alive, the course will involve hands-on examples from popular mobile platforms such as Android, iOS, and Windows Phone. Students will complete projects that focus on building real-world mobile apps on these platforms and learn how to take their mobile apps to market.

IS 3063. Database Management for Information Systems. (3-0) 3 Credit Hours.

Prerequisites: IS 2041 and IS 2043 with a grade of "C-" or better. A study of database management systems (DBMS) features, functions, and architecture, including logical design, data models, normalization, object-oriented data, and database administration. A DBMS product will be used to illustrate principles.

IS 3073. Application Development. (3-0) 3 Credit Hours.

Prerequisites: IS 2041 and IS 2043 with a grade of "C-" or better. A study of the use of information systems techniques to solve managerial problems. Includes cases where students are asked to design and implement information systems that address various classes of analytic problems. Principles of decision theory are addressed.

IS 3413. Introduction to Telecommunications for Business. (3-0) 3 Credit Hours.

Includes an in-depth look at basic telecommunications terminology and concepts. Introduction to voice and data networks, signaling and multiplexing. Network topologies and protocol fundamentals and architectures are presented and compared. TCP/IP protocols are introduced. Network security fundamentals are explored.

IS 3423. Network Security. (3-0) 3 Credit Hours.

Prerequisite: IS 3413 with a grade of "C-" or better or consent of instructor, Department Chair, and Dean of the College. The course provides a foundation in networking technologies that are core to creating secure networks. Topics included in this course are basic cryptography, secure networking protocols, logical and physical security management and security devices. Relation between these technologies and operational and implementation issues for these technologies will also be discussed. (Formerly titled "Secure Network Design.")

IS 3433. Introduction to Digital Forensics. (3-0) 3 Credit Hours.

The digital forensic investigation process involves organizational preparation, incident response, data collection, data analysis, and communication of findings. This course will teach students how to prepare for incidents, how to respond to incidents, and how to reliably collect digital data. Students will be introduced to various types of storage media and sources of volatile data. Students will also be introduced to fundamental legal issues related to digital forensics.

IS 3453. Networking Fundamentals. (3-0) 3 Credit Hours.

Prerequisite: IS 3413 with a grade of "C-" or better or consent of instructor, Department Chair, and Dean of the College. This course will focus on the principles of telecommunication with particular emphasis on networking. Networking and transmission protocols will be emphasized. Both IPv4 and IPv6 will be included. This class will also include the hardware side of the network. The role of servers, switches and routers will be included. Security will be introduced.

IS 3503. Attack and Defend – An Introduction to Information Assurance. (3-0) 3 Credit Hours.

An introduction to information assurance. This survey course will present common ways that hackers attack a network and how to defend against the attacks. It will also include related subjects such as how to protect data, encryption, physical security, and hiding data. The course is a "hands-on" class and students will gain experience with readily available software packages. This course is intended for non-Cyber Security majors. Information Systems and Cyber Security majors cannot use IS 3503 toward their degree requirements. (Same as ACC 3503. Credit cannot be earned for both ACC 3503 and IS 3503.)

IS 3513. Information Assurance and Security. (3-0) 3 Credit Hours.

This course provides an in-depth presentation of information assurance topics such as fraud, eavesdropping, traffic analysis, intrusion detection and prevention, hacking, viruses, and cryptography. Risk management will also be discussed. (Formerly IS 4453. Credit cannot be earned for both IS 3513 and IS 4453.)

IS 3523. Intrusion Detection and Incident Response. (3-0) 3 Credit Hours.

Prerequisite: IS 3513 with a grade of "C-" or better. This course provides an in-depth look at intrusion detection methodologies and tools and the approaches to handling intrusions when they occur; examines the laws that address cybercrime and intellectual property issues; and includes a study of proper computer and network forensics procedures to aid in the identification and tracking of intruders and in the potential prosecution of criminal activity.

IS 3533. Cyber Law. (3-0) 3 Credit Hours.

An introductory course in laws and legal issues that affect law enforcement, businesses, and investigators related to the preservation, collection, and analysis of digital data. Students will examine computer crime laws, civil and criminal laws that often involve electronic evidence, search and seizure of electronic evidence, judicial issues involving the admissibility of electronic evidence and related testimony, and legal issues involved with electronic surveillance.

IS 4033. Network Operations. (3-0) 3 Credit Hours.

Prerequisite: IS 3453 with a grade of "C-" or better or consent of instructor, Department Chair, and Dean of the College. The course will explore the fundamentals of operating a network. Issues to be included are physical security, electrical and air conditioning issues, data storage and retention, and backup and redundancy of data. Other topics include floor loading, patch management, converting user requirements to system requirements and disaster recovery.

IS 4053. Systems Analysis and Design. (3-0) 3 Credit Hours.

Prerequisites: IS 3063 with a grade of "C-" or better and MGT 3003. An introduction to systems theory and development techniques. Topics include problem definition, system development life cycle, feasibility analyses, project management, system models and CASE tools.

IS 4063. Advanced Topics in Information Systems. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and 15 semester credit hours of information systems courses (excluding IS 1403 and IS 3003). Survey of recent developments in information technology. Analysis will focus on applications in the business community and theoretical developments that relate to those applications. Ordinarily taken during semester of graduation.

IS 4073. The Information Resource. (3-0) 3 Credit Hours.

Prerequisites: IS 3003 with a grade of "C-" or better, MGT 3003, and MGT 3013. A study of the principles and concepts involved in the management of organizational information systems resources. Topics include project control, CIO functions, information systems planning, and strategic impact of information systems, multinational organizations, and relevant legal, professional, and ethical issues.

IS 4103. Business Process Management and Control. (3-0) 3 Credit Hours.

Prerequisite: IS 3003. Business professionals are frequently responsible for designing, implementing, supporting and managing technology-based business processes in organizations. In order to accomplish those tasks, these professionals must understand the business processes that support an organization and how they are controlled. This course contributes to the student's understanding of how key business processes are managed, controlled and integrated in enterprise resource planning systems. SAP will be used to illustrate the concepts discussed in the class. (Same as ACC 4103. Credit cannot be earned for both IS 4103 and ACC 4103.)

IS 4143. Wide Area Networks. (3-0) 3 Credit Hours.

Prerequisites: IS 3413 with a grade of "C-" or better and MGT 3003 or consent of instructor, Department Chair, and Dean of the College. This course explores the telecommunication technologies used in wide area networks. Technologies such as frame relay, ATM, TCP/IP, and voice over IP will be studied. The role of the common carriers will also be discussed. Secure network traffic over TCP/IP will be included.

IS 4153. Web Site Development. (3-0) 3 Credit Hours.

Prerequisites: IS 3073 with a grade of "C-" or better and MGT 3003 or consent of instructor, Department Chair, and Dean of the College. A study of issues related to the use of electronic networks to facilitate inter- and intra-organizational business activities. The principles of Web site design from the consumer and the information systems points of view will be presented. The course will also include the development of a Web site. (Formerly titled "Electronic Commerce.")

IS 4183. Advanced Database Concepts. (3-0) 3 Credit Hours.

Prerequisites: IS 3063 with a grade of "C-" or better and MGT 3003. In-depth consideration of concepts governing the design and management of database systems. Topics include database design, distributed databases, database administration, object-oriented data modeling, and performance evaluation.

IS 4213. Data Center Infrastructure Planning. (3-0) 3 Credit Hours.

Prerequisite: IS 4033 with a grade of "C-" or better or consent of instructor, Department Chair, and Dean of the College. The purpose of this class will be to explore the electrical power, air conditioning, and fire suppressant requirements of a data center. Electrical grids, standby generators, and uninterruptable power supplies will be discussed. The course explores the various aspects of power quality, interruption of service, voltage flicker and control, voltage swells and sags and power surges. Air conditioning requirements and methods will also be included. Fire suppressant techniques will also be part of the class. A comprehensive project involving the design of the data center to include these three major issues will be part of the class. (Formerly titled "Power and Air Conditioning.")

IS 4223. Emerging Network Technologies. (3-0) 3 Credit Hours.

Prerequisite: IS 3453 with a grade of "C-" or better or consent of instructor, Department Chair, and Dean of the College. Cloud computing has become popular in industry. This class will look at what it is and how it works. How cloud computing interfaces with current networks, computing ability and storage requirements will be discussed. Security issues will be an important part of the course. Other topics include virtual machines, storage area networks and remote systems management.

IS 4233. Cloud Technologies for Business. (3-0) 3 Credit Hours.

Prerequisite: IS 3413 with a grade of "C-" or better. Cloud computing has driven a significant shift in how enterprises operate. It changes the way businesses and their customers interact with their applications and data. Cloud technologies offer highly elastic scalability in the delivery of enterprise applications through software, platform, or infrastructure as a service. This course will look at how businesses can benefit from cloud technologies to stay competitive; it will cover fundamental concepts and models of cloud computing, as well as cloud computing mechanisms, architectures, and security.

IS 4463. Web Application Security. (3-0) 3 Credit Hours.

Prerequisites: IS 3513 with a grade of "C-" or better and MGT 3003 or consent of instructor. The security issues related to web applications will be discussed in this course. Topics include web application authentication, authorization, as well as browser and web database security principles. Various web application security attack types such as code injection, cross-site scripting, and cross-site request forgery will be studied. The course will also include discussions about business aspects that contribute to a secure web-based transaction environment. (Formerly titled "Secure Electronic Commerce.").

IS 4473. Information Assurance Policy. (3-0) 3 Credit Hours.

Prerequisites: IS 3413 with a grade of "C-" or better, MGT 3003, and one 3-semester-credit-hour security course, or consent of instructor, Department Chair, and Dean of the College. There are many policy issues, within the firm and at various levels of government, that affect information assurance. This course will examine how these policies affect electronic security. Subjects will include privacy of information, intellectual property protection, globalization of information systems, and other policy matters. The protection and control of secured information will also be discussed.

IS 4483. Digital Forensic Analysis I. (3-0) 3 Credit Hours.

An introductory course in collecting, examining, and preserving evidence of computer crimes. This course examines the issues, tools, and control techniques needed to successfully investigate illegal activities facilitated through the use of information technology. The tools of collecting, examining, and evaluating data in an effort to establish intent, culpability, motive, means, methods, and loss resulting from e-crimes will be examined. (Formerly titled "Cyber Forensics.").

IS 4513. Cyber and Physical Systems. (3-0) 3 Credit Hours.

Prerequisites: IS 3513 with a grade of "C-" or better and MGT 3003 or consent of instructor, Department Chair, and Dean of the College. Many of the critical infrastructure systems contain a system control and data acquisition (SCADA) component. Frequently, the control systems are remotely accessed and therefore becomes the focal point for attack. This course examines the control system components from the standpoint of vulnerability and protection. (Formerly titled "System Control and Data Acquisition.").

IS 4523. Digital Forensic Analysis II. (3-0) 3 Credit Hours.

Prerequisite: IS 4483. This course examines advanced digital forensic analysis topics, tools, techniques, and control mechanisms. Advanced topics include operating system artifacts, non-standard file systems, mobile devices, malware, and volatile memory. Students will gain experience with state-of-the-art forensics tools and techniques needed to successfully investigate illegal activities perpetuated through the use of information technology.

IS 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: MGT 3003, a 3.0 COB grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor for the required forms. Independent research in an information systems topic under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

IS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, a 3.0 COB grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor for the required forms. Independent research in an information systems topic under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

IS 4933. Internship in Information Systems. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, 9 semester credit hours of information systems courses (excluding IS 1403 and IS 3003), a 2.5 UTSA grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor for required forms. The opportunity to gain knowledge through experiential activities in professional life. Joint cooperation with business and governmental institutions in structuring and monitoring work experience aimed at supplementing the classroom learning process. May not be repeated for credit.

IS 4943. Internship in Information Assurance. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, 9 semester credit hours of information systems courses (excluding IS 1403 and IS 3003), a 2.5 UTSA grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor for required forms. The opportunity to gain knowledge through experiential activities in professional life. Joint cooperation with business and governmental institutions in structuring and monitoring work experience aimed at supplementing the classroom learning process. May not be repeated for credit.

IS 4951. Special Studies in Information Systems. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor. An organized course offering specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

IS 4953. Special Studies in Information Systems. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

IS 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: MGT 3003. Enrollment limited to students applying for Honors in Information Systems. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval. No more than 3 semester credit hours may apply toward information systems major requirements.

Interdisciplinary Studies (IDS)

Interdisciplinary Studies (IDS) Courses

IDS 2013. Introduction to Learning and Teaching in a Culturally Diverse Society. (3-0) 3 Credit Hours.

Introductory course for all prospective teachers. This course is designed to help students understand the complexity of K–12 teaching in our contemporary society. Students will examine the history, policies and practices that have shaped schooling in the United States. Contemporary dilemmas of equity, the achievement gap, and other marginalizing practices will be considered to better understand the culture of schooling and classrooms, and the complex role of the teacher. Emphasis will be on, but not limited to, students as learners, curriculum standards and assessment, effective teaching practices for diverse learners, professionalism, and the sociopolitical challenges confronting today's teachers. Field experience required.

IDS 2083. Technology for Learning and Teaching. (3-1) 3 Credit Hours.

This course focuses on integrating instructional technology into learning and teaching environments. Students will investigate theoretical and practical issues surrounding the use of instructional technologies. Participants will gain practical experience in curriculum planning that takes specific advantage of technology to enhance and extend learning. Course requirements are aligned with national and state technology standards.

IDS 2113. Society and Social Issues. (3-0) 3 Credit Hours.

This course explores contemporary social issues resulting from modern globalization and transnationalism from diverse disciplinary perspectives. Students investigate data and relate scholarship to understand the nature of global changes, as well as their impact on the world's people and global societies. Personal and social responsibility in relation to social issues will be explored through a variety of global, national, regional, and community-based topics. Students will be expected to synthesize disciplinary studies and demonstrate their connections of global issues to local contexts through written, oral, and visual representations. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences.

IDS 2403. Physical Science. (3-0) 3 Credit Hours.

Prerequisites: Completion of Mathematics and Science Core Curriculum requirements. Study of fundamental laws that govern the universe, including mechanics, thermodynamics, electromagnetism, and quantum theory, and how these relate to physics and chemistry. Topics will include but not be limited to: basic scientific problem-solving techniques, fundamental forces; energy and how it is conserved and transformed; matter; atomic structure; and chemical interactions. (Credit cannot be earned for both IDS 2403 and IDS 3234.).

IDS 2413. Earth Systems Science. (3-0) 3 Credit Hours.

Prerequisites: Completion of Mathematics and Science Core Curriculum requirements. This course provides a look at the Earth system as a whole. Emphasis will be on the interrelationships between biological, geological, hydrological, climatological, and human systems on local, continental and global scales. The interactions between the hydrosphere, atmosphere, biosphere, cryosphere, and lithosphere that together make up the Earth system will be studied. This interdisciplinary view of our planet highlights the manner in which all systems of the Earth control or influence each other. (Formerly IDS 3213. Credit cannot be earned for both IDS 2413 and IDS 3213. Credit cannot be earned for both IDS 2413 and IDS 3224.).

IDS 3003. STEM in Social Contexts. (3-0) 3 Credit Hours.

Prerequisites: IDS 2113, WRC 1013 and WRC 1023. An exploration of inquiry in STEM fields and how it is situated in local and global sociocultural contexts across time. This course uses an interdisciplinary approach to studying the nature of inquiry, knowledge, and theory development, as well as the mutual relationships between STEM fields and social contexts. (Formerly titled "Science and Humanity.").

IDS 3013. Diversity, Equity, and the Social Sciences. (3-0) 3 Credit Hours.

Prerequisite: IDS 2113. This course offers learners opportunities to explore issues of diversity and equity by examining the social construction of race, class, sex, sexuality and other markers that may cause social oppression. Students will be invited to engage in in-depth inquiry about knowledge production and identity construction within the dominant discourse, as well as in critical reflection on social transformation practices in schools and communities.

IDS 3123. Culture, Literature, and Fine Arts. (3-0) 3 Credit Hours.

Prerequisites: IDS 2113, WRC 1013, and WRC 1023. The goal of this course is to engage students in inquiry on how issues embedded within and across cultures/time periods are reflected, challenged, and reinterpreted, through literature, art, music, film, and other forms of cultural expression. By contrasting and comparing cultural discourses and identities, students will have opportunities to develop respect, empathy, and understanding of diversity and social responsibility from an interdisciplinary perspective.

IDS 3201. Inquiry in Physical Science. (0-3) 1 Credit Hour.

Prerequisites: Completion of Mathematics and Science Core Curriculum requirements. Hands-on experimental inquiry with standard laboratory tools and techniques in the fields of physics and chemistry. Major themes include energy, forces, and atomic and subatomic interactions. (Credit cannot be earned for both IDS 3201 and IDS 3234.).

IDS 3211. Inquiry in Earth Systems Science. (0-3) 1 Credit Hour.

Prerequisites: Completion of Mathematics and Science Core Curriculum requirements. Course familiarizes students with laboratory and field tools, techniques, and safety issues and allows them to form a better understanding of major topics in Earth systems science, especially in the areas of hydrology, soils, atmosphere, land cover, and GPS. Students will participate in scientific inquiry investigations of the Earth's systems and components. (Credit cannot be earned for both IDS 3211 and IDS 3224.) (Formerly titled "Advanced Earth Systems Science Laboratory.").

IDS 3224. Earth Systems Science Investigations. (2-4) 4 Credit Hours.

Prerequisites: Completion of Mathematics and Science Core Curriculum requirements. Integrated online lecture and laboratory course that provides a look at the Earth system as a whole. Emphasis will be on the interrelationships between biological, geological, hydrological, and human systems on local, continental and global scales. The interactions between the hydrosphere, atmosphere, biosphere, and lithosphere that together make up the Earth system will be studied. This interdisciplinary view of our planet highlights the manner in which all systems of the Earth influence each other. Credit for IDS 3224 is equivalent to credit for both IDS 2413 and IDS 3211. Credit cannot be earned for IDS 2413 (or IDS 3213) and IDS 3211 if this course is taken.

IDS 3234. Investigations in Physical Science. (2-4) 4 Credit Hours.

Prerequisites: Completion of Mathematics and Science Core Curriculum requirements. Integrated online lecture and laboratory course that provides learners with varied opportunities to build an understanding of intricate relationships commonly addressed in the fields of physics and chemistry, and to evaluate these relationships as a holistic system. Explorations of conceptual ideas will include varied methods of engagement, including hands-on and minds-on experimentation. Credit for IDS 3234 is equivalent to credit for both IDS 2403 and IDS 3201. Credit cannot be earned for IDS 2403 (or IDS 3203) and IDS 3201 if this course is taken.

IDS 3713. Interdisciplinary Inquiry. (3-0) 3 Credit Hours.

Prerequisites: IDS 2113, IDS 3003, IDS 3013, IDS 3123, WRC 1013, and WRC 1023. This course fosters opportunities for engaging in the study of thinking in the sciences, social studies, mathematics, language arts, and fine arts through interdisciplinary investigations. Course experiences include development, practice, and analysis of ways of inquiring in several subject areas and seeking their implications for interdisciplinary inquiries toward critical reflection and transformative praxis.

IDS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

IDS 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for honors in the Department of Interdisciplinary Learning and Teaching during the last two semesters; consent of the Honors College. Supervised research and preparation for an honors thesis. May be repeated once with advisor's approval.

Interior Design (IDE)

Interior Design (IDE) Courses

IDE 2143. Architecture and Interior Assemblies. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. The study of building materials, assemblies, and construction processes as used in interior environments with an emphasis on system components qualities, characteristics, and standard installation practices.

IDE 2153. Interior Materials and Assemblies. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Continued study of materials and assemblies as used in interior environments with an emphasis on ceiling, floor, and furniture systems, applied finishes, and specifications. (Formerly IDE 3153. Credit cannot be earned for both IDE 2153 and IDE 3153.)

IDE 2413. History of Interior Architecture I. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013, WRC 1023 and enrollment as an ARC or IDE major. Introduction to art, architecture, interior design, and decorative arts from antiquity to the Industrial Revolution. Explores the varied ways that design reflects and serves the social, religious, and political life in the Western and non-Western world.

IDE 2423. History of Interior Architecture II. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013, WRC 1023 and enrollment as an ARC or IDE major. Introduction to art, architecture, interior design, and decorative arts through the post-Industrial Revolution to the modern period. Explores the varied ways that design reflects and serves the social, religious, and political life in the Western and non-Western world. (Formerly titled "History of Design: Renaissance through Nineteenth Century.")

IDE 3013. Color and Light. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Studies of psychological and physiological effects of color and light in the built environment. Light as a form determinant of interior space. Introduction to artificial illumination design.

IDE 3133. Interior Design Topics. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. A study of current trends and issues in interior design.

IDE 3203. Details and Construction Graphics. (0-6) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Project driven course focusing on design and graphic documentation of interior architecture and construction.

IDE 3236. Interior Design Studio I. (0-14) 6 Credit Hours.

Prerequisites: IDE 2143 and IDE 2423. Interior design as the application of building construction systems and materials as key components in the art of shaping interior volumes. Project research and programming methods are applied and furniture selections are explored and integrated within a spatial context.

IDE 3246. Interior Design Studio II. (0-14) 6 Credit Hours.

Prerequisites: IDE 2143, IDE 2153, and ARC 4183. Interior design focused on integrating mechanical, acoustical, and lighting systems through a consideration of the relationship between human activities and various interior environments.

IDE 3433. Topics in Design Theory. (3-0) 3 Credit Hours.

Prerequisite: IDE 2423. Introduction to design theories. May be repeated for credit when topics vary. (Formerly IDE 4423.)

IDE 4213. Furniture Design and Construction. (0-6) 3 Credit Hours.

Prerequisite: IDE 3236. Focuses on the essential qualities of the elements of furniture design and construction, emphasizing human factors and the use of materials and connections.

IDE 4233. Computer Projects in Design. (2-2) 3 Credit Hours.

Prerequisite: ARC 2513 or consent of instructor. Project-driven lecture/laboratory course exploring advanced issues associated with 3-D modeling, animation, photo-realistic visualization, and computer-aided manufacturing. Considers the role these processes play in architectural and interior design.

IDE 4266. Systems Integration Studio. (0-14) 6 Credit Hours.

Prerequisites: IDE 2143, IDE 2153, IDE 3133, IDE 3246 or IDE 4816, and ARC 4183. Design and documentation of interior environments focusing on system integration and articulation of building assemblies. Includes complex programming, life safety issues, thermal control, lighting, electrical, acoustics, and water and waste management systems. (Formerly titled "Interior Design Systems Studio.")

IDE 4333. Practicum/Internship. (0-0) 3 Credit Hours.

Prerequisite: IDE 3236 or consent of instructor. Offers students majoring in Interior Design participation in a variety of design development concerns. Students work under supervision in an approved internship to gain knowledge of their respective professional fields.

IDE 4513. Practice and Ethics. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166. A study of the currently applied ethical, legal, and professional criteria for the practice of interior design. Issues investigated include forms of practice, client relationships, team leadership, office organization, and project management.

IDE 4816. International Studies Studio. (0-14) 6 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. An interior architecture studio associated with a study abroad program. (Formerly titled "Study Abroad: Studio.") (Same as ARC 4816. Credit cannot be earned for both IDE 4816 and ARC 4816.)

IDE 4823. International Studies Theory Seminar. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Formerly titled "Study Abroad: History/Theory.") (Same as ARC 4823. Credit cannot be earned for both IDE 4823 and ARC 4823.)

IDE 4833. International Studies Drawing Seminar. (0-6) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A drawing course associated with a study abroad program; involves field trips. (Formerly titled "Study Abroad: Observational Drawing.") (Same as ARC 4833. Credit cannot be earned for both IDE 4833 and ARC 4833.)

IDE 4843. International Studies History Seminar. (0-6) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Same as ARC 4843. Credit cannot be earned for both IDE 4843 and ARC 4843.)

IDE 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

IDE 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

IDE 4953. Special Studies in Interior Architecture. (0-6) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours for IDE 4953 or 12 hours for IDE 4956, regardless of discipline, will apply to a bachelor's degree.

IDE 4956. Special Studies in Interior Architecture. (0-14) 6 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours for IDE 4953 or 12 hours for IDE 4956, regardless of discipline, will apply to a bachelor's degree.

Italian (ITL)

Italian (ITL) Courses

ITL 1014. Elementary Italian I. (3-2) 4 Credit Hours. (TCCN = ITAL 1411)

Fundamentals of Italian offering the opportunity to develop listening, speaking, reading, and writing skills. Introduction to Italian culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

ITL 1024. Elementary Italian II. (3-2) 4 Credit Hours. (TCCN = ITAL 1412)

Prerequisite: ITL 1014, the equivalent, an appropriate placement test score, or consent of instructor. Fundamentals of Italian offering the opportunity to develop listening, speaking, reading, and writing skills. Further study of Italian culture.

ITL 2013. Intermediate Italian I. (3-1) 3 Credit Hours. (TCCN = ITAL 2311)

Prerequisite: ITL 1024, the equivalent, an appropriate placement test score, or consent of instructor. Continued practice in developing listening, speaking, reading, and writing skills. Grammar and further study of Italian culture.

ITL 2023. Intermediate Italian II. (3-1) 3 Credit Hours. (TCCN = ITAL 2312)

Prerequisite: ITL 2013, the equivalent, an appropriate placement test score, or consent of instructor. Continued practice in developing listening, speaking, reading, and writing skills. Grammar review and further study of Italian culture.

ITL 2333. Italian Literature in English Translation. (3-0) 3 Credit Hours. (TCCN = ENGL 2331)

Major works of Italian literature across time, genres, and movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly ITL 3333. Credit cannot be earned for both ITL 2333 and ITL 3333.)

Japanese (JPN)

Japanese (JPN) Courses

JPN 1014. Elementary Japanese I. (3-2) 4 Credit Hours. (TCCN = JAPN 1411)

Fundamentals of Japanese offering the opportunity to develop basic speaking, listening, reading, and writing skills. Read and write Hiragana and Katakana. Introduction of Kanji and Japanese culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

JPN 1024. Elementary Japanese II. (3-2) 4 Credit Hours. (TCCN = JAPN 1412)

Prerequisite: JPN 1014, the equivalent, the appropriate placement test score, or consent of instructor. Fundamentals of Japanese offering the opportunity to develop basic speaking, listening, reading, and writing skills. Further study of Japanese culture and Kanji.

JPN 2013. Intermediate Japanese I. (3-1) 3 Credit Hours. (TCCN = JAPN 2311)

Prerequisite: JPN 1024, the equivalent, the appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, speaking, reading, and writing skills through structural analysis of the Japanese language. Further study of Japanese culture and Kanji.

JPN 2023. Intermediate Japanese II. (3-1) 3 Credit Hours. (TCCN = JAPN 2312)

Prerequisite: JPN 2013, the equivalent, the appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, speaking, reading, and writing skills through structural analysis of the Japanese language. Further study of Japanese culture and Kanji.

JPN 3023. Advanced Language Skills. (3-0) 3 Credit Hours.

Prerequisite: JPN 2023, the equivalent, the appropriate placement test score, or consent of instructor. Offers the opportunity to develop advanced-level oral and written communication skills in the Japanese language, along with enhanced comprehension skills in listening and reading. May be repeated for credit when topics vary.

JPN 3053. Business Japanese. (3-0) 3 Credit Hours.

Prerequisite: JPN 2023, the equivalent, the appropriate placement test score, or consent of instructor. Offers the opportunity to develop speaking, reading, and writing skills in business fields. Emphasis on Japanese business manners and business terminology.

JPN 4213. Topics in Japanese Culture. (3-0) 3 Credit Hours.

Prerequisite: JPN 2023, the equivalent, the appropriate placement test score, or consent of instructor. Selected topics of Japanese culture, such as Modernization, Westernization, current issues in U.S.-Japan relationships, contemporary cultural developments, or a linguistic topic. May be repeated for credit when topics vary.

Kinesiology (KIN)

NOTE: All prerequisites for Kinesiology (KIN) courses must be completed with a grade of "C-" or better.

Kinesiology (KIN) Courses

KIN 1001. Individual Physical Activities. (0-3) 1 Credit Hour.

Practice in the techniques of individual physical activities. Sections focus on particular sports or fitness activities as indicated in the Schedule of Classes. May be repeated for credit, but not more than 6 semester credit hours of KIN 1001 alone or in combination with KIN 1101 will apply to a bachelor's degree.

KIN 1013. Freshman Topics in Kinesiology. (3-0) 3 Credit Hours.

This course is designed to help students acquire the tools and life skills necessary to succeed in college and the future. The curriculum is an overview of topics including: note and test taking, learning styles, concentration skills, stress management, communication, diversity, and how to choose a major and a career. The student will be oriented with the different aspects of Roadrunners for Life, UTSA's version of the NCAA CHAMPS/Life Skills Program. A maximum of 3 semester credit hours of freshman topics courses may apply to a bachelor's degree.

KIN 1101. Team Sports. (0-3) 1 Credit Hour.

Practice in the techniques of team sports. Sections focus on particular sports as indicated in the Schedule of Classes. May be repeated for credit, but not more than 6 semester credit hours of KIN 1101 alone or in combination with KIN 1001 will apply to a bachelor's degree.

KIN 2003. Computer Applications in Kinesiology and Health. (3-0) 3 Credit Hours.

Prerequisite: KIN 2303 or HTH 2413. Application of computer and multimedia technology in Kinesiology and Health disciplines.

KIN 2123. Fitness and Wellness Concepts. (3-0) 3 Credit Hours. (TCCN = KINE 1338)

Prerequisite: KIN 2303 or consent of instructor. This course is designed to provide students with developmentally appropriate knowledge and skills in health and fitness. The course will address health-related issues in personal, interpersonal, and community settings. An individual fitness requirement may be required.

KIN 2141. Medical Terminology. (1-1) 1 Credit Hour.

Prerequisites: KIN 2303 and admission to the Athletic Medicine Program. This course examines the word roots, prefixes, suffixes and terms used in medicine and clinical exercise. A major focus will be on the terms used in the major organ systems of the body, diseases, injuries, and medical treatments.

KIN 2303. Foundations of Kinesiology. (3-0) 3 Credit Hours. (TCCN = KINE 1301)

Study of the history and philosophy of physical activity, and an introduction to anatomy, physiology, biomechanics, motor behavior, and psychology of exercise and sport. This course will also introduce careers in kinesiology and the requirements for graduation with a degree in kinesiology. (Formerly titled "Cultural and Scientific Foundations of Kinesiology.")

KIN 2421. Outdoor Activities and Innovative Games. (1-2) 1 Credit Hour.

Prerequisite: KIN 2303. Practice in delivering instructions of selected outdoor activities (hiking, orienteering, biking) and innovative games for all age groups. Weekend class field trips required. Laboratory fee will be assessed. (Formerly titled "Outdoor Activities and Lifetime Sports.")

KIN 2441. Management and Organization in Kinesiology and Sports. (1-1) 1 Credit Hour.

Prerequisite: KIN 2303. Introduction to concepts and skills that will prepare the student to become an effective leader of physical fitness, sport and health, and physical education programs. (Formerly KIN 2423. Credit cannot be earned for both KIN 2423 and KIN 2441.)

KIN 3001. Skill Analysis in Physical Activity: Individual Activities. (1-2) 1 Credit Hour.

Practice in delivering developmentally appropriate physical activity instruction in a variety of selected individual activities such as golf, bowling, archery, and track and field.

KIN 3011. Skill Analysis in Physical Activity: Team Sports I. (1-2) 1 Credit Hour.

Practice in delivering developmentally appropriate physical activity instruction in a variety of selected team sports, such as basketball, soccer, and baseball/softball.

KIN 3013. Theory of Coaching. (3-0) 3 Credit Hours.

This course will discuss the principles and philosophies of coaching sports. Domains will remain consistent with that of the National Standards for Sport Coaches and will focus on philosophy and ethics, safety and injury prevention, physical conditioning, growth and development, teaching and communication, sport skills and tactics, organization and administration, and evaluation.

KIN 3021. Skill Analysis in Physical Activity: Team Sports II. (1-2) 1 Credit Hour.

Practice in delivering developmentally appropriate physical activity instruction in a variety of selected team sports, such as football, volleyball, and team handball.

KIN 3031. Skill Analysis in Physical Activity: Dual Sports. (1-2) 1 Credit Hour.

Practice in delivering developmentally appropriate physical activity instruction in a variety of selected dual sports, such as badminton, tennis and handball.

KIN 3041. Skill Analysis in Physical Activity: Track and Field. (1-2) 1 Credit Hour.

Specialized activity instruction involving skills, drills, rules, regulations, and skill performance in a variety of selected track and field events.

KIN 3051. Group Fitness Instruction. (1-2) 1 Credit Hour.

Prerequisite: KIN 2303 or consent of instructor. Practice in delivering a variety of appropriate aerobic, musculoskeletal fitness, and wellness activities for children and adults. (Formerly titled "Aerobic Fitness Instruction.").

KIN 3061. Foundational Movement. (1-2) 1 Credit Hour.

Provide instruction in facilitating the foundational movement skills which provide the basis for all movement capacities and their application in specialized activities geared to the early childhood through adolescent stages. (Formerly titled "Rhythmical Activities and Dance.").

KIN 3071. Musculoskeletal Fitness Instruction. (1-2) 1 Credit Hour.

Prerequisite: KIN 3313. Instructional techniques applied to resistance training, plyometrics, flexibility, and musculoskeletal conditioning activities.

KIN 3103. Motor Development. (3-0) 3 Credit Hours.

A study of motor, physical, and neuromuscular development across the human life span. Effects of social, cognitive, growth and maturation, and aging factors on motor development will be addressed. Directed field experience may be required.

KIN 3113. Scientific Principles of Physical Activity. (3-1) 3 Credit Hours.

A study of the physiological and biomechanical principles of physical activity and human movement. Emphasis is placed on acute responses and chronic adaptations of the musculoskeletal and cardiorespiratory systems to physical activity.

KIN 3123. Early Childhood Development Through Movement. (3-0) 3 Credit Hours.

A study of movement development and the effects on cognitive and social development of young children. Students will learn to program and deliver developmentally appropriate strategies and activities to introduce and refine fundamental movement skills and health-related components of fitness. Task analysis and sequential delivery of concepts and skills will also be discussed. Some field work experiences may be required.

KIN 3213. First Aid and Injury Management. (3-0) 3 Credit Hours.

Prerequisite: KIN 2303 or KIN 3013. Study and application of first aid and treatment of common exercise-related injuries in sport and exercise environments. Additional training includes risk-management strategies for providing safe exercise environments, and management of exercise testing facilities. Upon successful completion of this course, the student will be eligible for certification in first aid and CPR. (Credit cannot be earned for both KIN 3213 and HTH 2523.).

KIN 3303. Athletic Injuries and Training Procedures. (3-0) 3 Credit Hours.

Prerequisite: KIN 3313 or equivalent. Prevention and care of athletic injuries. A study of training and conditioning for the team and individual. Techniques and procedures for emergencies: diagnostic, preventive, and remedial measures. Organization of the training room facility. Directed field experience may be required.

KIN 3313. Anatomy and Physiology for Kinesiology. (3-1) 3 Credit Hours.

Prerequisite: KIN 2303 or HTH 2413. A detailed study of anatomy and physiology of the human cardiorespiratory, musculoskeletal and nervous systems. Emphasis will be placed on the anatomical factors that cause human movement and application to common exercise-related injuries. Anatomy laboratory hours may be required.

KIN 3321. Biomechanics Laboratory. (1-1) 1 Credit Hour.

Prerequisite: KIN 3313 and concurrent enrollment in KIN 3323. Quantitative and qualitative evaluation of human movement through analysis of video and biomechanical data. Application of Biomechanics to sports performance enhancement and injury prevention. This lab will complement the content covered in KIN 3323.

KIN 3323. Biomechanics. (3-0) 3 Credit Hours.

Prerequisite: KIN 3313 or equivalent. The study of the human body in sports motion and sport objects in motion. The application of mechanical principles, kinematics, and kinetics. Biomechanics laboratory hours are required.

KIN 3413. Tactics. (3-0) 3 Credit Hours.

Prerequisite: KIN 2303. Development, organization, and delivery of appropriate physical activities for children through the adolescent stage. Some fieldwork observation experiences may be required.

KIN 3431. Exercise Physiology Laboratory. (1-1) 1 Credit Hour.

Prerequisite: KIN 3313 and concurrent enrollment in KIN 3433. Laboratory exercises demonstrating principles of exercise physiology. Topics include metabolic, cardiorespiratory, and neuromuscular responses to physical activity and exercise.

KIN 3433. Exercise Physiology. (3-0) 3 Credit Hours.

Prerequisite: KIN 3313 or equivalent. A study of the adaptation and effects of the body to physiological stress. Emphasis will be placed on the physiology of training, metabolism and work capacity, and electrocardiography.

KIN 3441. Graded Exercise Testing and Fitness Assessment Laboratory. (1-1) 1 Credit Hour.

Prerequisite: KIN 3433 and concurrent enrollment in KIN 3443. This course includes laboratory and clinical measurements of aerobic capacity, balance, body composition, electrocardiography, flexibility, muscular endurance, muscular strength, and pulmonary function. Students are required to demonstrate competence in administering health related physical fitness.

KIN 3443. Graded Exercise Testing and Fitness Assessment. (3-0) 3 Credit Hours.

Prerequisite: KIN 3433. A study of the principles and concepts of fitness measurement. Topics include graded exercise testing, electrocardiography, assessment of aerobic capacity, body composition, flexibility, muscular strength, muscular endurance, and pulmonary function.. (Formerly titled "Fitness Testing and Exercise Prescription.").

KIN 3453. Fitness Programming and Exercise Prescription. (3-1) 3 Credit Hours.

Prerequisites: KIN 3071, KIN 3323, and KIN 3433. A study and application of principles and concepts related to designing exercise programs. The target population includes apparently healthy adults and individuals with special considerations, including cardiovascular disease, pulmonary disease, obesity, diabetes, pregnancy, and children.

KIN 3463. Musculoskeletal Anatomy. (3-1) 3 Credit Hours.

Prerequisite: KIN 3313 or equivalent, and admission to the Athletic Medicine Program. A detailed examination of the nervous, muscular, and skeletal systems. This course focuses on bones, bone markings, articulations, origins, insertions, actions, and innervations of these systems. The etiology and pathophysiology of common sport and exercise related injuries to the musculoskeleton will be introduced. Laboratory examination of the skeletal system may be required.

KIN 4023. Exercise Psychology. (3-0) 3 Credit Hours.

Prerequisite: KIN 2303. An investigation of psychological processes and behaviors related to participation in exercise and physical activities. Psychological effects of exercise, motives for fitness, exercise adherence, and fitness counseling.

KIN 4043. Therapeutic Modalities. (3-0) 3 Credit Hours.

Prerequisites: KIN 3303, KIN 3463, and admission to the Athletic Medicine Program. This course is designed to introduce students to a variety of therapeutic modalities currently used in clinical rehabilitation. Students will learn the theoretical basis and application procedures for a variety of modalities including therapeutic heat and cold, electrotherapy, therapeutic massage, ultrasound, and laser/light therapy.

KIN 4113. Evaluation. (3-0) 3 Credit Hours.

Application of test, measurement, and evaluation theory. Emphasis is on proper selection and administration of tests, appropriate evaluation of test results using basic statistical procedures, and assignment of grades. Field experience required.

KIN 4123. Psychosocial Aspects of Exercise and Sport. (3-0) 3 Credit Hours.

Prerequisite: KIN 2303. A study of human behavior in exercise and sport. Emphasis is placed on understanding the psychosocial principles underlying group processes, performance enhancement, and health and well-being.

KIN 4143. Advanced Athletic Training. (3-0) 3 Credit Hours.

Prerequisites: KIN 3303 and KIN 3463, and admission to the Athletic Medicine Program. This course deals in depth with issues related to athletic training, including assessment of injuries, and proper taping and wrapping techniques.

KIN 4203. Teaching Secondary Physical Education. (3-1) 3 Credit Hours.

Prerequisites: KIN 4343, KIN 4423, and admission to the Teacher Certification Program. Examination of current trends, issues, and pedagogical approaches to the teaching and learning of physical education in the secondary school curriculum. Contemporary programming, behavior management strategies, and community outreach activities will be emphasized. Weekly fieldwork in the public schools at the secondary school level is required. Restricted course; advisor code required for registration.

KIN 4233. Advanced Topics in Exercise Physiology. (2-2) 3 Credit Hours.

Prerequisite: KIN 3433. In-depth study of exercise physiology, emphasizing application of physiological principles of training for physical fitness and sport performance, graded exercise testing, and professional issues. This course includes introduction to research in exercise physiology.

KIN 4243. Musculoskeletal Rehabilitation. (3-1) 3 Credit Hours.

Prerequisites: KIN 3303, KIN 3463, and admission to the Athletic Medicine Program. This course examines various therapeutic exercises and programs used in the treatment and rehabilitation of exercise-related injuries.

KIN 4253. Exercise Nutrition. (3-0) 3 Credit Hours.

Prerequisite: KIN 3433. This course will address the basic concepts of nutrition from a scientific basis, applying these concepts to understanding of food nutritional labeling, dietary recommendations for health and fitness, as well as exercise or sport performance enhancement.

KIN 4303. Teaching Elementary Physical Education. (3-1) 3 Credit Hours.

Prerequisites: KIN 4343, KIN 4423, and admission to the Teacher Certification Program. Examination of current trends, issues, and pedagogical approaches to teaching and facilitating learning of physical education in the elementary school curriculum. Contemporary programming, problem solving, and community outreach activities will be emphasized. Weekly fieldwork in the public schools at the elementary school level is required. Restricted course; advisor code required for registration.

KIN 4343. Movement Awareness. (3-0) 3 Credit Hours.

Prerequisite: KIN 3413. Study of concepts of movement awareness and the elements of movement that are the basis of all movement capacities. Application of these concepts to the learning of motor skills will be included.

KIN 4401. Motor Learning Laboratory. (1-1) 1 Credit Hour.

Prerequisite: KIN 3313, and concurrent enrollment in KIN 4403. Laboratory exercises demonstrating the principles of motor learning and motor control. This lab will complement KIN 4403.

KIN 4403. Motor Learning. (3-0) 3 Credit Hours.

Prerequisite: KIN 3313 or an equivalent. Functional applications of motor control and learning theory in skill instruction and sports performance. Motor learning laboratory hours are required.

KIN 4413. Coaching Athletics. (3-0) 3 Credit Hours.

Theory of coaching relevant to athletics. Emphasis on organization and content involved in coaching sports. The sport content may vary in different semesters between baseball, basketball, football, soccer, softball, and volleyball. Course may be repeated for credit.

KIN 4423. Developmental/Adapted Physical Activity. (3-1) 3 Credit Hours.

Prerequisites: KIN 3103 and KIN 3413, or consent of instructor. A developmental and functional approach to the study of disabilities in physical activity. Legislation, pathologies, and adaptation principles. Field experience is required throughout the course.

KIN 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

KIN 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

KIN 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

KIN 4931. Clinical Applications of Athletic Injuries. (1-2) 1 Credit Hour.

Prerequisites: Consent of instructor and admission to the Athletic Medicine Program. This course provides practical applications in prevention, diagnosis, treatment, and rehabilitation of athletic injuries, and includes 300 hours of supervised field, laboratory and clinical experiences in athletic training. May be repeated for credit for a maximum of 6 semester credit hours.

KIN 4936. Internship in Kinesiology. (0-0) 6 Credit Hours.

Prerequisites: Student is required to have a cumulative grade point average of 2.0 or greater and must be within 13 semester credit hours of graduation. Supervised internship with appropriate agency in the field of kinesiology. No more than 6 semester credit hours of internship will apply to a bachelor's degree. (Credit cannot be earned for both KIN 4936 and HTH 4936.).

KIN 4943. Athletic Coaching Practicum. (0-0) 3 Credit Hours.

Prerequisites: First Aid and CPR certification and consent of instructor. Supervised coaching practicum with appropriate agency in the field of kinesiology. May be repeated for credit for a maximum of 6 semester credit hours. (Formerly titled "Practicum in Kinesiology.").

KIN 4953. Special Studies. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

KIN 4973. Wellness Counseling. (3-0) 3 Credit Hours.

Prerequisites: KIN 3443 and KIN 4253. Students will learn and apply counseling techniques to promote the adoption of health-promoting lifestyle behaviors in diverse populations. Basic counseling theories will be introduced.

KIN 4983. Applied Exercise Science. (3-1) 3 Credit Hours.

Prerequisites: KIN 3323, KIN 3433, KIN 3443, KIN 3453, and KIN 4253. Capstone course and seminar for students pursuing training and certification in exercise science, and preparation for graduate studies.

KIN 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for honors in the Department of Health and Kinesiology during the last two semesters; consent of the Honors College. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Korean (KOR)

Korean (KOR) Courses

KOR 1014. Elementary Korean I. (3-2) 4 Credit Hours. (TCCN = KORE 1411)

Fundamentals of Korean offering the opportunity to develop basic listening, speaking, reading, and writing skills. Introduction of Korean characters and Korean culture.

KOR 1024. Elementary Korean II. (3-2) 4 Credit Hours. (TCCN = KORE 1412)

Prerequisite: KOR 1014, an equivalent, an appropriate placement test score, or consent of instructor. Fundamentals of Korean offering the opportunity to develop basic speaking, listening, reading, and writing skills. Further study of Korean characters and Korean culture.

Latin (LAT)

Latin (LAT) Courses

LAT 1114. Introductory Latin I. (3-2) 4 Credit Hours. (TCCN = LATI 1411)

Fundamentals of Latin grammar and readings in Latin. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

LAT 1124. Introductory Latin II. (3-2) 4 Credit Hours. (TCCN = LATI 1412)

Prerequisite: LAT 1114. Fundamentals of Latin grammar and readings in Latin.

LAT 1214. Self-Paced Introductory Latin. (4-0) 4 Credit Hours.

Fundamentals of Latin grammar and readings in Latin. Students take two semesters of this course to complete the first two semesters of Latin on a self-paced basis. May be repeated for credit, but not more than 8 semester credit hours may be used in any degree program. Students must demonstrate competency with a "C-" or better before repeating this course for credit. Students cannot receive credit for both LAT 1114 and a first semester of this course; students cannot receive credit for both LAT 1124 and a second semester of this course.

LAT 2113. Intermediate Latin I. (3-0) 3 Credit Hours. (TCCN = LATI 2311)

Prerequisite: LAT 1124 or the equivalent. Continued practice in reading Latin. Selections from Cicero, Sallust, Catullus, and/or Virgil. Review of Latin grammar and syntax.

LAT 2123. Intermediate Latin II. (3-0) 3 Credit Hours. (TCCN = LATI 2312)

Prerequisite: LAT 2113 or the equivalent. Reading and in-depth analysis of a particular Latin author such as Ovid, Virgil, Cicero, Lucretius, Petronius, or Plautus.

LAT 2213. Self-Paced Intermediate Latin. (3-0) 3 Credit Hours.

Prerequisite: LAT 1124 or the equivalent. Review of Latin grammar and syntax. Continued practice in reading Latin, including such authors as Catullus, Cicero, Lucretius, Ovid, Petronius, Plautus, Sallust, and Virgil. Students take two semesters of this course to complete the third and fourth semesters of Latin on a self-paced basis. May be repeated for credit, but not more than 8 semester credit hours may be used in any degree program. Students must demonstrate competency with a "C-" or better before repeating this course for credit. Students cannot receive credit for both LAT 2113 and a first semester of this course; students cannot receive credit for both LAT 2123 and a second semester of this course.

LAT 3113. Selected Latin Authors. (3-0) 3 Credit Hours.

Prerequisite: LAT 2123 or the equivalent. Close reading and critical analysis of a Latin text or texts, author, topic, or genre. May be repeated for credit when authors vary.

LAT 3213. Latin Epic Poetry. (3-0) 3 Credit Hours.

Prerequisite: Intermediate Latin II or equivalent. Students will read, analyze and discuss selections from Vergil's Aeneid and Ovid's Metamorphoses, setting the poems in the context of the historical and social events in Rome that inspired them as well as exploring their Greek precedents.

LAT 3223. Latin Lyric Poetry. (3-0) 3 Credit Hours.

Prerequisite: Intermediate Latin II or equivalent. Students will read, analyze and discuss the poetry of Catullus and Horace, setting the poems in the context of the historical and social events in Rome that inspired them and exploring the Greek precedents for the genre of lyric poetry.

LAT 3253. Republican Prose. (3-0) 3 Credit Hours.

Prerequisite: Intermediate Latin II or equivalent. An overview of the development of prose in the Republican era, with an emphasis on the works of Cicero and Caesar. Students consider the rhetorical and generic features of their composition and the historical social and political circumstances that produced them.

LAT 4013. Advanced Readings in Latin. (3-0) 3 Credit Hours.

Prerequisite: LAT 2123 or the equivalent. Concentrated readings and interpretation of a selected Latin author, genre, or series of texts. May be repeated for credit when topics vary.

Legal Studies (LGS)

Legal Studies (LGS) Courses

LGS 2013. Introduction to Legal Studies. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An introduction to legal studies from an interdisciplinary perspective, exploring historical and contemporary aspects of the content, operations, and effects of law in societies.

LGS 3013. Legal Research and Writing. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Provides students with the opportunity to explore the modes and sources of legal research, both traditional and electronic. (Credit cannot be earned for both LGS 3013 and CRJ 3613. CRJ 3613 may be substituted for LGS 3013 in the LGS minor.).

LGS 3113. Minorities and the Law. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the litigation, case law, legislation, and legal literature associated with African Americans and Mexican Americans in the United States. (Formerly titled "Blacks, Chicanos, and the Law.").

LGS 3213. Law School Studies. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Basic introduction to the primary subject areas covered in American law schools. Topics generally include Property, Civil Procedure, Contracts, Torts, Criminal Law, Family Law, Constitutional Law, and Professional Ethics. Topic coverage may extend to corporations, oil and gas, tax, or other more specialized topics. The course will better prepare students for the anticipated coursework and subject matter for the transition to law school.

LGS 3323. Constitutional Analysis I. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An analysis of constitutional cases, issues, and modes of interpretation focusing on governmental powers. Provides students the opportunity to hone analytical, critical reading, and writing skills and to increase substantive knowledge of constitutional law. (Same as POL 3323. Credit cannot be earned for both LGS 3323 and POL 3323.).

LGS 3333. Constitutional Analysis II. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An analysis of constitutional cases, issues, and modes of interpretation focusing on the Bill of Rights, individual freedoms, and equal protection. Provides students the opportunity to enhance analytical, critical-reading, and writing skills and to increase substantive knowledge of constitutional law. (Same as POL 3333. Credit cannot be earned for both LGS 3333 and POL 3333.).

LGS 3413. Regulatory Law and Enterprise. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines federal, state, and local administrative and regulatory engagement with Texan, American, and international enterprise. Students have the opportunity to explore law and policies affecting economic development, property, oil and gas, international trade, the Internet, and the environment.

LGS 4013. Issues in Law and Society. (3-0) 3 Credit Hours.

Prerequisite: POL 1013 or LGS 2013. Provides students with the opportunity to conduct research on selected issues associated with the law and society. May be repeated for credit when topics vary, with permission of the Director of the Institute for Law and Public Affairs.

LGS 4123. Legal and Philosophical Reasoning. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An intensive analysis of selected philosophical texts focusing on law and justice. Students are challenged to develop critical reading and thinking skills by studying the texts of philosophers such as Plato, Aristotle, Dworkin, Hart, and/or others who outline difficult arguments and unfamiliar ideas. Emphasis is placed on drawing reasoned conclusions, advocating positions, and expressing oneself in oral and written forms. (Same as POL 4123. Credit cannot be earned for both LGS 4123 and POL 4123.).

LGS 4133. Analytical Reasoning, Logic, Argumentation, and Law School Admission. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course provides students with the opportunity to develop and master techniques of focused reading, analytical reasoning, logic, argumentation, and the drawing of reasoned conclusions, placed in the context and modes of questioning appropriate to law school admission and education. Skills learned are relevant not only to law school, but also to developing and assessing arguments throughout college, career, and life.

LGS 4223. Torts. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course provides students with the opportunity to analyze American tort law. Topics may include negligence, intentional torts, affirmative defenses, and legal damages, as well as vicarious products and strict liability. Students should be prepared to read, brief, and discuss case law.

LGS 4233. The Federal Judiciary. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the operations, procedures, holdings, and opinions of federal courts, designed to provide students with the opportunity to gain a sophisticated understanding of the role of the federal judiciary in our constitutional system.

LGS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: POL 1013; permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College. Independent reading, research, discussion, and writing under direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. A maximum of 3 semester credit hours may be applied to the minor.

LGS 4933. Internship in Legal Studies. (0-0) 3 Credit Hours.

Prerequisites: POL 1013; consent of internship coordinator. Supervised experience relevant to legal studies within selected community organizations. A maximum of 3 semester credit hours may be applied to the minor.

Linguistics (LNG)

Linguistics (LNG) Courses

LNG 3813. Introduction to Linguistics. (3-0) 3 Credit Hours.

Basic principles of analysis and description of the structure of language, including sound system, word order, and meaning. Also, overview of selected subfields of linguistics, such as historical linguistics, sociolinguistics, language acquisition, and bilingualism. (Same as ANT 3903 and ENG 3343. Credit cannot be earned for more than one of these courses.)

LNG 3833. Sociolinguistics. (3-0) 3 Credit Hours.

The examination of the interrelationships among language, culture, and society. Topics may include language use in social context, language variation and change, maintenance and shift, and multilingual societies.

LNG 4013. Topics in Linguistics. (3-0) 3 Credit Hours.

Prerequisite: One course in LNG or consent of instructor. An opportunity to explore linguistic topics in depth, including sociolinguistics, psycholinguistics, neurolinguistics, pragmatics, syntax, semantics, phonology, or phonetics. May be repeated for credit when topics vary. (Formerly LNG 3913. Credit cannot be earned for both LNG 4013 and LNG 3913.)

Management (MGT)

Management (MGT) Courses

MGT 3003. Business Communication and Professional Development. (3-0) 3 Credit Hours.

Prerequisites: COM 1043 or COM 1053, WRC 1023, and classified as a prebusiness or declared major in the College of Business or approval of Department Chair and Dean of the College. This course examines basic interpersonal communication processes within written and oral channels, with practical applications for the business environment. Issues regarding cross-cultural communication, crisis communication, and ethical considerations in business are discussed. The course emphasizes three areas: 1) planning, researching, organizing, writing, editing, and revising business-related documents; 2) planning, organizing, and delivering oral presentations in a business setting; and 3) preparing for professional success in the business world, including career planning, networking, job searching, résumé preparation, and job application and interviewing. Written assignments and oral presentations are required. (Formerly MGT 3043. Credit cannot be earned for both MGT 3003 and MGT 3043.)

MGT 3013. Introduction to Organization Theory, Behavior, and Management. (3-0) 3 Credit Hours.

A study of the complex role managers play in creating and maintaining organizations. Organization theory and behavior are explored within the context of changing technological, social, and political/legal environments and the internationalization of the economy. Some introduction to strategic analysis, planning, and decision making. Attention is given to the ethical dimensions of management and social responsibility.

MGT 3023. Understanding People and Organizations. (3-0) 3 Credit Hours.

Prerequisite: MGT 3013 with a grade of "C-" or better. A critical examination of behavioral theory as it relates to the management of individuals, dyads, and groups in organizations. Investigation of the organization as an open system of tasks, structures, tools, and people in states of continuous change.

MGT 3123. Organizational Communication. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 with a grade of "C-" or better, and a declared major in the College of Business or approval of Department Chair and Dean of the College. Theory and research in organizational communication. The course will examine the barriers to effective organizational communication; group communication and decision making; and information flows through the formal and informal networks of organizations. The course will also stress the means of evaluating organizational communication effectiveness. (Same as COM 3893. Credit cannot be earned for both MGT 3123 and COM 3893.)

MGT 3253. Interpersonal Communication. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. Theory and research of communication in personal and professional settings. The course stresses the social context of communication and emphasizes skills, knowledge, and motivation of verbal and nonverbal interactions. (Same as COM 3383. Credit cannot be earned for both MGT 3253 and COM 3383.)

MGT 3613. Managing Human Resources. (3-0) 3 Credit Hours.

Prerequisites: MGT 3013 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. Analysis of how organizations attract, motivate, develop, and retain employees, and how they interact with organizations representing employees. Designed to provide students with an opportunity to understand the functional areas of human resource management and the integration of these functions into an effective and efficient human resource management system.

MGT 4023. Business Plan. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. This course requires students to work in a team where they propose a new business and develop a business plan for the business. The teams will learn to present and defend their plan and will compete in a business plan competition at the end of the semester. The course emphasizes development of the skills necessary to identify, value, and exploit entrepreneurial opportunities for the creation of wealth.

MGT 4073. International Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. A study of business and management practices in a global context. Topics include an introduction to international management, the role of the cultural, legal, and political environments in shaping management decision making, current developments in forming global business strategies, organizational designs, cross-cultural staffing, global communications and managerial control methodologies. Emphasis on thinking globally and competitively.

MGT 4083. Comparative International Management Practices. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013, with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. The study of management practices of other countries, including their cultural, social, political and legal, and industrial economic perspectives. Emphasis on different international regions at different times and their impact on American and global management practices.

MGT 4103. Introduction to Healthcare Management. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior standing, or consent of the instructor. This course will provide students with an understanding of the skills, knowledge and abilities needed to be successful leaders in the dynamic, complex and rewarding field of healthcare management. Topics include the economic, regulatory, political and social framework of the healthcare industry, as well as the roles and expectations of managers in planning, organizing, coordinating and overseeing the delivery of healthcare services. A broad spectrum of healthcare organizations and settings will be included with emphasis on practical relevance and interaction with local healthcare organizations.

MGT 4213. Designing Organizations. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, MGT 3013, and MGT 3023 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. Study of the antecedents and consequences of organizational design and structure. Emphasis on the implications for managing behavior in a rapidly changing global environment.

MGT 4613. Compensating Employees. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3613 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. Analyzing, developing, implementing, administering, and performing ongoing evaluation of a total compensation and benefits system for all employee groups consistent with organizational goals. (Formerly MGT 3623. Credit cannot be earned for both MGT 4613 and MGT 3623.).

MGT 4623. Staffing Organizations. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3613 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. Planning, developing, implementing, administering, and performing ongoing evaluation of recruiting, hiring, orientation, and organizational exit to ensure that the workforce will meet the organization's goals and objectives.

MGT 4643. Human Resources Law. (3-0) 3 Credit Hours.

Prerequisites: BLW 3013 and MGT 3003 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. An analysis of historical and contemporary laws in the United States that affect the human resource management function. Integration of labor and employment law with the social and economic forces shaping the current labor-management environment.

MGT 4663. Training and Developing Employees. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3613 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. The processes of ensuring that the skills, knowledge, abilities, and performance of the workforce meet the current and future organizational and individual needs through developing, implementing, and evaluating activities and programs addressing employee training and development, change and performance management, and the unique needs of particular employee groups.

MGT 4803. Managing Human Resources for Competitive Advantage. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in MGT 3003, MGT 3613, and one of the following: MGT 4613, MGT 4623, or MGT 4663; and a declared major in the College of Business or approval of Department Chair and Dean of the College. Analysis of how human resource management might aid in developing competitive advantage and what might be done to fulfill this potential. Emphasis is on the processes and activities used to formulate HR objectives, practices, and policies to meet the short-range and long-range organizational needs and opportunities, to guide and lead the change process, and to evaluate the contributions of human resources to organizational effectiveness. (Formerly titled "Strategic Human Resources Management.").

MGT 4893. Management Strategy. (3-0) 3 Credit Hours.

Prerequisites: FIN 3014 and MGT 3003; College of Business declared major in semester of graduation. Students are also required to meet all University regulations related to good academic standing and maintain a minimum grade point average of 2.0 in UTSA College of Business courses. Permission given through the academic advisor before registration. A study of the analytic tools and processes involved in the formulation and implementation of strategic choices in realistic organizational settings. Students are required to integrate their functional knowledge and understanding of the global environment with the concepts and principles of strategic management to determine effective ways to resolve complex problems concerning the relationship between the total organization and its environment. Creative analytical skills and effective communication in light of current management thinking are emphasized.

MGT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MGT 4923. Leading Organizations and Making Decisions. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 with a grade of "C-" or better and a declared major in the College of Business or department or instructor approval. This is an advanced course focusing on traditional and contemporary perspectives on leadership. Because the leader is seen as a decision maker, individual and organizational issues surrounding effective decision making are also addressed in detail.

MGT 4933. Internship in Management. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, a 2.5 UTSA grade point average, 9 semester credit hours of management courses, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for additional requirements and required forms. The opportunity for managerial work experience. Requires a semester-long experience in private business or a public agency and a written component. Opportunities and output requirements are developed in consultation with a faculty advisor and the Department Chair and require approval of both. Internship may be repeated once (for a total of 6 semester credit hours), provided the internships are with different organizations.

MGT 4943. Managing Effective Teams and Resolving Conflict. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, MGT 3013, and MGT 3023 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. This is an advanced course focused on building the skills necessary to work effectively as part of a team. Conflict resolution techniques and effective negotiation techniques are examined in detail.

MGT 4951. Special Studies in Management. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MGT 4953. Special Studies in Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MGT 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: MGT 3003. Enrollment limited to students applying for Honors in Management. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Management Science (MS)

Management Science (MS) Courses

MS 1023. Business Statistics with Computer Applications I. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in IS 1403 and MAT 1033, or equivalents. This is the first course in a sequence of three courses designed to introduce basic statistical and quantitative techniques for business and economics. This course examines analytical skills and statistical concepts important in business-oriented environments. Various statistical techniques will be presented to assist in solving problems encountered by organizations. Topics include, but are not limited to, descriptive statistics, measures of central tendency and dispersion, elementary probability theory, expected value, random variables, discrete and continuous distributions, sampling distributions, point and interval estimation, and hypothesis testing. Electronic spreadsheets will be utilized for analyzing and interpreting data.

MS 3043. Business Statistics with Computer Applications II. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in MAT 1033, IS 1403, and MS 1023, or equivalents. This course builds on the foundations learned in MS 1023. Statistical concepts include, but are not limited to, hypothesis testing concepts, goodness-of-fit tests, tests of independence, nonparametric tests, decision making under uncertainty, analysis of variance, correlation, linear and multiple regression, and time series. Electronic spreadsheets and statistical software will be utilized in analyzing and interpreting data and for hands-on assessment.

MS 3053. Management Science and Operations Technology. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in MAT 1033, IS 1403, MS 1023, and MS 3043, or equivalents. This is an introductory course in management science that emphasizes model building as a foundation for rational decision making and problem solving across disciplines and functional areas. Topics include, but are not limited to, mathematical programming, network models, project management, multi-criteria decision making, inventory management, service operations and queuing models, Markov analysis, and simulation. Computer software is used to apply these techniques in the analysis of a wide variety of decision problems.

MS 3063. Decision Support Systems. (3-0) 3 Credit Hours.

This course focuses on applications of decision-support models and computer software to problems in business, government, and other types of organizations with an emphasis on emerging technologies. It emphasizes fundamentals of decision support systems and hands-on experience using computer-based technologies to support organizational decision making. The primary focus is on four essential areas: decision analysis, simulation, project analysis, and mathematical programming. Excel, Microsoft Project, WINQSB, Expert Choice, and Extend are some of the software packages utilized.

MS 3073. Business Analytics. (3-0) 3 Credit Hours.

This course is designed to provide an introduction to business analytics. It describes and interprets the basic concepts of business analytics, describes basic principles of data mining as a basic tool of business analytics, evaluates the difficulties presented by large databases, and plans, organizes and evaluates methods to prepare raw data. Comparison and contrasts among different business analytics techniques are examined, including different methods of data mining, and provides for interpreting, analyzing and validating results.

MS 3313. Business Applications of Statistics. (3-0) 3 Credit Hours.

This course emphasizes application of statistics in problem-solving situations involving management, marketing, human resources, finance, and operations management. Useful techniques include analysis of variance, simple and multiple regression, logistic regression, multiple discriminant analysis, factor analysis, cluster analysis, multidimensional scaling, and conjoint analysis. Students use computer software such as SPSS or SAS in their analyses.

MS 3403. Logistics Management. (3-0) 3 Credit Hours.

This course focuses on analyzing managerial decisions related to the movement and storage of supplies, work-in-process, and finished goods, examining the trade-offs encountered by managers: costs and service levels, level and modes of transportation used, warehousing and control of inventory levels, demand management and forecasting master production scheduling, just-in-time (JIT), materials requirements planning (MRP), MRP II, DRP, materials handling within warehouses, distribution of finished goods to customers, industrial packaging, and importance of logistics to the overall productivity of a firm are investigated. When available, an integrated software approach such as supply chain management (SCM) and enterprise resource planning (ERP) by SAP, Oracle or I2 will be adopted.

MS 3413. Purchasing and Inventory Management. (3-0) 3 Credit Hours.

This course explores the industrial purchasing cycle for materials acquisition and management. Determination of requirements, supplier qualifications, appraisals, source selection, buying practices, value analysis, policies, ethics, and international purchasing are included in this course. Inventory control concepts, techniques, and strategies for effective integration with basic finance, marketing, and manufacturing objectives are topics covered in this course. Models for dependent and independent demand inventory systems, material requirements planning systems, distribution requirements, planning techniques, and the classical reorder point inventory model are also included.

MS 4313. Six Sigma and Lean Operations. (3-0) 3 Credit Hours.

This course focuses on Six Sigma as a quality improvement methodology structured to reduce failure rates to a negligible level and on lean operations methodology structured to reduce waste. Materials include an overview of lean management philosophy and fundamentals of DMAIC problem-solving methodology. Topics include project criteria and prioritization methods, process capability measures, scorecard development, Six Sigma tools, DOE, and sampling and analyzing process data.

MS 4323. Simulation Applications in Business. (3-0) 3 Credit Hours.

A study of the techniques for modeling and analysis of business processes using computer simulation and animation is the focus of this course. Selected example applications from supply chain management, financial, marketing, and operations functions are included. The computer simulations provide support for the management decision process.

MS 4333. Project Management. (3-0) 3 Credit Hours.

This course provides a practical examination of how projects are managed from start to finish. The emphasis is on planning and control to avoid common pitfalls and manage risk. Planning includes defining objectives, identifying activities, establishing precedence relationships, making time estimates, determining project completion times, and determining resource requirements. CPM/PERT networks are established, and computer software (Microsoft Project, WINQSB, and Excel) is used to monitor and control the project.

MS 4343. Production/Operations Management. (3-0) 3 Credit Hours.

This course focuses on the production and operations management function in business. It includes a review of the methods required for design, operation, and improvements of the systems that create products or services. Traditional topics in manufacturing and service operations are investigated including an introduction to supply chain management concepts.

MS 4353. Service Operations Management. (3-0) 3 Credit Hours.

This course is designed to provide an in-depth examination of operations management practices in service-oriented environments. The subjects introduced include topics from operations management, logistics, marketing, economics, and management demonstrated in a broad spectrum of service organizations. The course looks at strategic concepts in modern service management and presents analytical tools for business decision making. Topics include, but are not limited to, service quality, process design, facility location analysis and site selection, waiting line models, inventory management in services, demand forecasting, workforce scheduling, learning curve models, overbooking, service supply chain, and integrated service operations management. (Same as MKT 4353. Credit cannot be earned for both MS 4353 and MKT 4353.)

MS 4363. Quality Management and Control. (3-0) 3 Credit Hours.

This course investigates the fundamental nature of quality and its implications for business. Topics include statistical methods for quality improvement in manufacturing and service operations. Emphasis is given to both the technical and managerial issues in understanding and implementing quality as a component for success in today's global business environment.

MS 4383. Applied Forecasting in Operations. (3-0) 3 Credit Hours.

This course introduces modern and practical methods for operations planning and decision making. Short-term forecasting of demand, personnel requirements, costs and revenues, raw material needs, and desired inventory levels are some of the topics included. Other topics covered include technological and environmental forecasting, decomposition methods, and monitoring (automatic procedures such as tracking signals).

MS 4543. Supply Chain Management. (3-0) 3 Credit Hours.

Principles, techniques and practices of corporate supply chain management are covered in this course. The focus is on the strategic coordination and information management that integrates supplier selection, purchasing, transportation, inventory and warehousing, channel planning and configuration, production and distribution from procurement of raw material to customer satisfaction. Business decision models and techniques for facility location, production, inventory, transportation and other operational issues are presented. Currently available software will be surveyed and cases of successful implementations will be analyzed.

MS 4913. Independent Study in Management Science. (0-0) 3 Credit Hours.

Prerequisites for business majors: A 3.0 College of Business grade point average, permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms and additional requirements. Independent reading, research, discussion, and/or writing under the direction of a faculty member. This course may be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MS 4933. Internship in Management Science. (0-0) 3 Credit Hours.

Prerequisites for business majors: Permission in writing from the instructor, the Department Chair, and the Dean of the College of Business; and a 2.5 grade UTSA point average. See academic advisor for required forms and additional requirements. Supervised full- or part-time work experience in management science. Offers opportunities for applying management science in private businesses or public agencies. May be repeated for credit, but not more than 6 semester credit hours will apply to a bachelor's degree.

MS 4951. Special Studies in Management Science. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor, Department Chair and Dean. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special studies may be repeated for credit when the topics vary.

MS 4953. Special Studies in Management Science. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor, Department Chair and Dean. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special studies may be repeated for credit when the topics vary.

Management of Technology (MOT)

Management of Technology (MOT) Courses

MOT 4023. Essentials of Technology Management. (3-0) 3 Credit Hours.

Prerequisite: MGT 3003 or approval of the Department Chair and the Dean of the College. MGT 3003 is waived for nonbusiness students declaring Technology Management as a minor. This survey course provides an overview of the issues that impact technology management. All technology management subsystems are included: strategy, technology, resource, organizational, project, and people. The course is designed to help students develop the systems thinking necessary to successfully interact with the burgeoning technological world. The course will also provide the opportunity for students to develop the entrepreneurial skills important in managing the design, development, and commercialization of technological goods and services. (Formerly titled "Management of Technology.").

MOT 4143. Introduction to Project Management. (3-0) 3 Credit Hours.

Prerequisite: MGT 3003 or approval of the Department Chair and the Dean of the College. MGT 3003 is waived for nonbusiness students declaring Technology Management as a minor. This introductory course presents concepts and techniques for the management of many types of projects including engineering, construction, product development, as well as science and technology projects. The course is designed to help students develop project planning skills including scope definition, scheduling, cost-estimating and risk assessment. The course will also provide the opportunity for students to develop skills in support of project leadership, team building and communication.

MOT 4203. Strategic Management of Technology and Innovation. (3-0) 3 Credit Hours.

Prerequisite: MOT 4023 or approval of the Department Chair and the Dean of the College. This course examines the issues involved in the strategic management of technology in contemporary business organizations. The course will examine new product development, emerging technologies and product portfolios; and will explore the dynamics of innovation in the firm.

MOT 4313. Disruptive Innovations. (3-0) 3 Credit Hours.

Prerequisite: MOT 4023 or approval of the Department Chair and the Dean of the College. This survey course focuses on technologies that may transform society and improve quality of life: the emphasis is on the nexus among biotechnology, information systems, materials, and renewable energy. The course will help students refine the systems thinking necessary to connect technology with users: it investigates the barriers that entrepreneurs face during commercialization. Cooperative learning is a defining characteristic of the course.

MOT 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: A 3.0 COB grade point average, MOT 4023 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for the required forms. Independent research in a management of technology topic under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MOT 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: A 3.0 COB grade point average, MOT 4023 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for the required forms. Independent research in a management of technology topic under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MOT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 COB grade point average, MOT 4023 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for the required forms. Independent research in a management of technology topic under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MOT 4951. Special Studies in Management of Technology. (1-0) 1 Credit Hour.

Prerequisites: MOT 4023 and approval of the Department Chair and the Dean of the College. An organized course offering specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MOT 4952. Special Studies in Management of Technology. (2-0) 2 Credit Hours.

Prerequisites: MOT 4023 and approval of the Department Chair and the Dean of the College. An organized course offering specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MOT 4953. Special Studies in Management of Technology. (3-0) 3 Credit Hours.

Prerequisites: MOT 4023 and approval of the Department Chair and the Dean of the College. An organized course offering specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Marketing (MKT)

Marketing (MKT) Courses

MKT 3013. Principles of Marketing. (3-0) 3 Credit Hours.

Introduction to basic principles of marketing. An examination of market analysis methods and their use to develop the organization's product mix and the integration of the communication, distribution, and pricing strategies to achieve goals.

MKT 3043. Advertising. (3-0) 3 Credit Hours.

Prerequisite: MKT 3013 with a grade of "C-" or better. The course stresses planning advertising strategy, developing messages, selecting media, and testing effectiveness. Also explores the theory, history, social and economic aspects, and problems of ethics and truth in advertising.

MKT 3063. Personal Selling. (3-0) 3 Credit Hours.

Prerequisite: MKT 3013 with a grade of "C-" or better. Focuses on professional salesmanship. Fundamentals of persuasive interpersonal communication and buyer motivation are stressed as the foundation to effective selling. (Formerly MKT 3163. Credit cannot be earned for both MKT 3063 and MKT 3163.)

MKT 3083. Marketing Research. (3-0) 3 Credit Hours.

Prerequisites: MKT 3013 with a grade of "C-" or better, MS 1023 or the equivalent, and MS 3043 or the equivalent. Explores the techniques of marketing research as the means to discover opportunities for investing the firm's resources in its product offerings, including research design, sampling, data collection and analysis, and presentation of findings for marketing action.

MKT 3113. Retailing. (3-0) 3 Credit Hours.

Prerequisite: MKT 3013 with a grade of "C-" or better. Examination of retailing as a specialized economic and social institution within the distribution process. Emphasis is on strategy and resource management for the retail firm; critical variables, forces, and processes are examined from a managerial perspective.

MKT 4063. Multicultural Marketing. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. Highlights marketing opportunities created by consumers whose marketplace choices and behaviors are shaped by their social identities as members of distinctive ethnic, age cohort, sexual orientation, and disability subcultures. Profiles the demographic, geographic, values, lifestyles, media usage, and unique market preferences of each group. Emphasizes best practices in multicultural marketing strategy, and delineates similarities to and differences from international marketing management.

MKT 4073. International Marketing. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. An overview of concepts, processes, and strategies necessary to offer goods and services successfully in the global marketplace. Focus is on analyzing and assessing political, economic, technological, cultural, and competitive climates in global markets; defining the nature of important needs within the consumer and/or business segments of the country; the selection of countries or regions for market expansion strategies; the selection of target customers; and the design of strategies to facilitate market entry and subsequent expansion.

MKT 4093. Consumer Behavior. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. Focus on the customer as a primary consideration in strategic marketing decisions. Analysis of personal and environmental variables in the customer's world as the basis for market segmentation and subsequent formulation of the marketing mix.

MKT 4143. Sports Marketing. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. An overview of the marketing concepts, practices, and processes involved in offering and promoting goods and services in the sports industry. Emphasis on developing an understanding of unique aspects of the sports industry and on adapting general marketing principles to the domain of sports marketing. (Formerly MKT 4953 Special Studies in Marketing: Sports Marketing. Credit cannot be earned for both MKT 4143 and MKT 4953 on the same topic.)

MKT 4153. Ethics in Marketing. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. Addresses the moral principles behind the operation and regulation of marketing including; advertising, international marketing, internet and social advertising, marketing research, personal selling, pricing and distribution channels, and product management.

MKT 4233. Integrated Marketing Communications. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. Focuses on managing and integrating communication aspects of marketing, including advertising, sales promotion, personal selling, and public relations.

MKT 4353. Service Operations Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. In-depth examination of operations management practices in service-oriented environments. Subjects embrace materials from operations management, logistics, marketing, economics, and management in a broad spectrum of service organizations. The course looks at strategic concepts in modern service management and presents analytical tools for business decision making. Topics include, but are not limited to, service quality, process design, facility location analysis and site selection, waiting line models, inventory management in services, demand forecasting, workforce scheduling, learning curve models, overbooking, service supply chain, and integrated service operations management. (Same as MS 4353. Credit cannot be earned for both MKT 4353 and MS 4353. Marketing majors cannot take MS 4353 as an upper-division Marketing elective.)

MKT 4763. Real Estate Marketing. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. Focuses on the processes involved in professionally marketing and selling real estate. Emphasis is on integrating the four elements of a marketing mix – promotion, place, product, and price – and showing how they are used within the real estate industry to create marketing strategies. (Same as RFD 4763. Credit cannot be earned for both MKT 4763 and RFD 4763. Marketing majors cannot take RFD 4763 as an upper-division Marketing elective.)

MKT 4893. Marketing Capstone. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, MKT 3013 with a grade of "C-" or better, senior standing, and 12 additional semester credit hours in marketing. Students are also required to meet all University regulations related to good academic standing and maintain a minimum grade point average of 2.0 in UTSA College of Business courses. Approval is obtained through the academic advisor. The course focuses on integrating marketing functions, processes, and concepts into coherent and effective marketing decision making. (Formerly titled "Marketing Strategy.")

MKT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, MGT 3003, MKT 3013 with a grade of "C-" or better, 9 additional semester credit hours in marketing, senior standing, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MKT 4933. Internship in Marketing. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, MKT 3013 with a grade of "C-" or better, a 2.5 UTSA grade point average, 9 additional semester credit hours in marketing, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor for required forms and additional requirements. The opportunity to gain knowledge through the experiential activities of organizational life. Joint cooperation with business, government, and health science institutions in structuring and monitoring work experience aimed at supplementing the learning process. Opportunities are developed in consultation with the faculty advisor and Department Chair and require approval of both. Internship may be repeated once (for a total of 6 semester credit hours) provided the internships are with different organizations, but only 3 hours may count toward the 21 hours of marketing required for the major.

MKT 4951. Special Studies in Marketing. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. An organized course offering the opportunity for specialized study not normally available as part of the regular course offerings. Could include topics such as marketing channels of distribution, sales management, industrial marketing, current developments in marketing theory, and analysis of ethical, social, and public policy aspects of marketing. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

MKT 4953. Special Studies in Marketing. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. An organized course offering the opportunity for specialized study not normally available as part of the regular course offerings. Could include topics such as marketing channels of distribution, sales management, industrial marketing, current developments in marketing theory, and analysis of ethical, social, and public policy aspects of marketing. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

MKT 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: MGT 3003. Enrollment limited to students applying for Honors in Marketing. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Mathematics (MAT)

NOTE: All prerequisites for Mathematics (MAT) courses must be completed with a grade of "C-" or better.

Mathematics (MAT) Courses

MAT 0203. Basic Mathematics. (3-0) 3 Credit Hours.

A course intended for students with minimal mathematical skills who need a comprehensive review before they can successfully complete an algebra course. Topics include the Fundamental Mathematics and Geometry objectives of the Texas Higher Education Assessment (THEA), with an introduction to algebra. Intensive review and maintenance of computational skills with integers, fractions, decimals, percentages, ratios, and proportions; reading and interpreting information presented in graphs, tables, and charts; solving word problems, elementary algebraic equations, problems with two- and three-dimensional geometric figures; and inductive and deductive reasoning skills. Course does not count toward any degree at UTSA. This course may be repeated. (Formerly MTC 0103.)

MAT 0213. Intermediate Algebra. (3-0) 3 Credit Hours.

Introductory algebra course that includes the Texas Higher Education Assessment (THEA) Algebra and Problem Solving objectives. Operations with algebraic expressions; solving one- and two-variable equations; solving word problems involving one and two variables; graphing number relationships; and solving problems involving quadratic equations. Course does not count toward any degree at UTSA. This course may be repeated. (Formerly MTC 0113.).

MAT 1023. College Algebra with Applications. (3-0) 3 Credit Hours. (TCCN = MATH 1314)

Prerequisite: Satisfactory performance on a placement examination. Topics include algebraic expressions; equations; inequalities over the real numbers; relations, functions and graphs; polynomial and rational functions; systems of linear equations and inequalities; complex numbers; and matrices and determinants. A wide range of applications will be included in this course. Students majoring in areas that require MAT 1214 Calculus I are encouraged to take MAT 1073 instead of MAT 1023. (Formerly MTC 1023. Credit can be earned for only one of the following: MAT 1023, MTC 1023, MAT 1063, MTC 1073, or MAT 1073.) This course is designed for majors outside sciences and engineering and will not serve as a prerequisite for MAT 1093. May apply toward the Core Curriculum requirement in Mathematics.

MAT 1033. Algebra with Calculus for Business. (3-0) 3 Credit Hours. (TCCN = MATH 1325)

Prerequisite: Satisfactory performance on a placement examination. An introduction to business calculus with an emphasis on the algebra of functions. Concentration is on the algebraic manipulations of functions and includes volume and profit functions, both linear and quadratic; root finding and graphical analysis; matrices; and differentiation and integration. (Formerly MTC 1033. Credit cannot be earned for both MAT 1033 and MTC 1033.) May apply toward the Core Curriculum requirement in Mathematics.

MAT 1043. Introduction to Mathematics. (3-0) 3 Credit Hours. (TCCN = MATH 1332)

Prerequisite: Satisfactory performance on a placement examination. This course is designed primarily for the liberal arts major to satisfy the Core Curriculum mathematics requirement. Topics may include logic; proofs; deductive and inductive reasoning; number theory; fundamentals of statistics; basic statistical graphs; causal connections; financial management; functions; linear graphs and modeling; exponential growth and decay; logarithms; fundamentals of probability; fundamentals of geometry; and basic ideas from trigonometry, calculus, and discrete mathematics. (Formerly MTC 1043. Credit cannot be earned for both MAT 1043 and MTC 1043.) May apply toward the Core Curriculum requirement in Mathematics.

MAT 1073. Algebra for Scientists and Engineers. (3-0) 3 Credit Hours. (TCCN = MATH 1314)

Prerequisite: Satisfactory performance on a placement examination. This course is designed to prepare the student for MAT 1093 Precalculus and MAT 1214 Calculus I. Topics may include algebraic expressions; equations; inequalities over the real numbers; relations; functions; polynomial and rational functions; logarithmic and exponential functions; systems of linear equations and inequalities; matrices and determinants; complex numbers; sequences; series binomial expansion; mathematical induction; permutations, and combinations. (Formerly MTC 1073. Credit can be earned for only one of the following: MAT 1073, MTC 1073, MAT 1063, MTC 1023, or MAT 1023.) May apply toward the Core Curriculum requirement in Mathematics.

MAT 1093. Precalculus. (3-0) 3 Credit Hours. (TCCN = MATH 2312)

Prerequisite: MAT 1073 or the equivalent course or satisfactory performance on a placement examination. Exponential functions, logarithmic functions, trigonometric functions, complex numbers, DeMoivre's theorem, and polar coordinates. May apply toward the Core Curriculum requirement in Mathematics.

MAT 1153. Essential Elements in Mathematics I. (3-0) 3 Credit Hours. (TCCN = MATH 1350)

Prerequisite: MAT 1023 or MAT 1073. Numeration systems; properties of the systems of whole numbers, integers, rational numbers, and real numbers; problem solving; logic. May not be applied toward a major in mathematics. (Credit cannot be earned for both MAT 1153 and MAT 1143.).

MAT 1163. Essential Elements in Mathematics II. (3-0) 3 Credit Hours. (TCCN = MATH 1351)

Prerequisite: MAT 1153. Algebra, statistics and probability; geometric shapes; measurement; coordinate and transformational geometry. May not be applied toward a major in mathematics.

MAT 1193. Calculus for the Biosciences. (3-0) 3 Credit Hours. (TCCN = MATH 2313)

Prerequisite: MAT 1093 or an equivalent course or satisfactory performance on a placement examination. An introduction to calculus is presented using discrete-time dynamical systems and differential equations to model fundamental processes important in biological and biomedical applications. Specific topics to be covered are limits, continuity, differentiation, antiderivatives, definite and indefinite integrals, the fundamental theorem of calculus, differential equations, and the phase-plane. (Formerly MAT 1194. Credit can be earned for only one of the following: MAT 1193, MAT 1194, or MAT 1214.) May apply toward the Core Curriculum requirement in Mathematics.

MAT 1214. Calculus I. (4-0) 4 Credit Hours. (TCCN = MATH 2413)

Prerequisite: MAT 1093 or an equivalent course or satisfactory performance on a placement examination. An introduction to the concepts of limit, continuity and derivative, mean value theorem, and applications of derivatives such as velocity, acceleration, maximization, and curve sketching; introduction to the Riemann integral and the fundamental theorem of calculus. (Credit can be earned for only one of the following: MAT 1214, MAT 1193, or MAT 1194.) May apply toward the Core Curriculum requirement in Mathematics.

MAT 1224. Calculus II. (4-0) 4 Credit Hours. (TCCN = MATH 2414)

Prerequisite: MAT 1193 or MAT 1214. Methods of integration, applications of the integral, sequences, series, and Taylor expansions. (Formerly MAT 1223. Credit cannot be earned for both MAT 1224 and MAT 1223.).

MAT 2214. Calculus III. (4-0) 4 Credit Hours. (TCCN = MATH 2415)

Prerequisite: MAT 1224. Vectors, functions of several variables, partial derivatives, line, surface and volume integrals, Green's, Stokes' and the Divergence theorems. (Formerly MAT 2213. Credit cannot be earned for both MAT 2214 and MAT 2213.).

MAT 2233. Linear Algebra. (3-0) 3 Credit Hours. (TCCN = MATH 2318)

Prerequisite: MAT 1224 or EGR 2323. Vector spaces and matrix algebra, matrices and determinants, characteristic values of matrices, and reduction to canonical forms. Emphasis on applications.

MAT 3013. Foundations of Mathematics. (3-0) 3 Credit Hours.

Prerequisite: MAT 1214. Development of theoretical tools for rigorous mathematics. Topics may include mathematical logic, propositional and predicate calculus, set theory, functions and relations, cardinal and ordinal numbers, Boolean algebras, and construction of the natural numbers, integers, and rational numbers. Emphasis on theorem proving. (Formerly MAT 2243. Credit cannot be earned for MAT 3013 and MAT 2243.)

MAT 3103. Data Analysis and Interpretation. (3-0) 3 Credit Hours.

Prerequisite: MAT 1093 or consent of instructor. Measurement, sampling, summarizing and displaying data, types of data, inferential methods, nonparametric methods, qualitative research designs and methods, interpreting research results, and research design. Applications to research techniques in school-based settings will be emphasized. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

MAT 3123. Fundamentals of Geometry. (3-0) 3 Credit Hours.

Prerequisite: MAT 1093 or consent of instructor. A survey of geometric concepts, including axiomatic development of advanced Euclidean geometry, coordinate geometry, non-Euclidean geometry, three-dimensional geometry, and topology. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

MAT 3213. Foundations of Analysis. (3-0) 3 Credit Hours.

Prerequisites: MAT 1224 and MAT 3013. Axiomatic definition of real numbers, including order properties and completeness; infinite sequences and their convergence; basic notions related to series and their convergence; functions and function limits. Introduction to topology of the real line. Emphasis on theorem proving.

MAT 3223. Complex Variables. (3-0) 3 Credit Hours.

Prerequisites: MAT 2214 and MAT 3013. An introduction to complex variables, including elementary functions, line integrals, power series, residues and poles, and conformal mappings.

MAT 3233. Modern Algebra. (3-0) 3 Credit Hours.

Prerequisites: MAT 1214 and MAT 3013 or consent of instructor. Topics will include the development of groups, integral domains, fields, and number systems, including the complex numbers. Divisibility, congruences, primes, perfect numbers, and some other problems of number theory will be considered.

MAT 3273. Applied Mathematics for Sciences and Engineering. (3-0) 3 Credit Hours.

Prerequisite: MAT 2214 or MAT 3613 or consent of instructor. Mathematical applications in biology, physics, engineering or other scientific disciplines. Topics may employ techniques of complex analysis, harmonic analysis, Fourier series, Fourier transforms, and partial differential equations.

MAT 3613. Differential Equations I. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in MAT 2233. Basic notions of differential equations, solution of first-order equations and linear equations with constant coefficients, nth-order initial value problems, Laplace transforms, and may include additional topics such as power series solutions of differential equations, linear systems, and stability.

MAT 3623. Differential Equations II. (3-0) 3 Credit Hours.

Prerequisite: MAT 3613. Continuation of MAT 3613. May include topics in stability, linear systems, power series solutions, partial differential equations, and boundary value problems.

MAT 3633. Numerical Analysis. (3-0) 3 Credit Hours.

Prerequisites: MAT 2233, MAT 3213, and one of the following: CS 1063, CS 1073, CS 1713, or CS 2073. Solution of linear and nonlinear equations, curve-fitting, and eigenvalue problems.

MAT 3653. Stochastic Calculus. (3-0) 3 Credit Hours.

Prerequisite: STA 3513. Probability, random walk, Brownian motion, stationary and evolutionary processes and stochastic differential equations.

MAT 4013. Graphing Calculator Topics. (3-0) 3 Credit Hours.

Prerequisite: MAT 1214 or consent of instructor. Mathematical topics from algebra, trigonometry, calculus, modeling, and probability and statistics will be investigated using the graphing calculator. Assessment and evaluation techniques using technology will also be included. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

MAT 4113. Computer Mathematical Topics. (3-0) 3 Credit Hours.

Prerequisite: MAT 1214. Mathematical topics from algebra, Euclidean and non-Euclidean geometry, number theory, and probability and statistics will be investigated using Geometer's Sketchpad and a variety of Web-based mathematics resources. Course will also include the application of software to the solution of a variety of geometric and algebraic problems. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

MAT 4123. History of Mathematics. (3-0) 3 Credit Hours.

Prerequisites: MAT 3233 or MAT 4233, and either MAT 3123 or MAT 4263. Selected subjects in mathematics developed through historical perspectives and biographies. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

MAT 4213. Real Analysis I. (3-0) 3 Credit Hours.

Prerequisite: MAT 3213. Continuous functions, uniform continuity; theory of differentiation; applications of the derivative to properties of functions; antiderivatives; Riemann integral; connection between differentiation and integration.

MAT 4223. Real Analysis II. (3-0) 3 Credit Hours.

Prerequisite: MAT 4213. Lebesgue integral on the real line; n-dimensional spaces; vectors; calculus of functions of several variables; multidimensional integration.

MAT 4233. Modern Abstract Algebra. (3-0) 3 Credit Hours.

Prerequisites: MAT 2233 and MAT 3013. An in-depth study of groups and rings.

MAT 4253. Number Theory. (3-0) 3 Credit Hours.

Prerequisite: MAT 3233 or MAT 4233. The theory of primes, congruences, and related subjects.

MAT 4263. Geometry. (3-0) 3 Credit Hours.

Prerequisite: MAT 3013. A study of non-Euclidean geometries, including spherical geometry, hyperbolic geometry and others.

MAT 4273. Topology. (3-0) 3 Credit Hours.

Prerequisite: MAT 3213. Set theory, including cardinal and ordinal numbers. Topological properties of the real-line and metric spaces.

MAT 4303. Capstone Course for Mathematics. (3-0) 3 Credit Hours.

Prerequisites: Consent of instructor or one each from MAT 3123 or MAT 4263, MAT 3233 or MAT 4233, and MAT 4013 or MAT 4113. This course is for any interested mathematics major, particularly for those students who intend to pursue secondary certification in Mathematics. The goals of the course are to enable students to build connections among the mathematical areas they have studied and between undergraduate mathematics and high school mathematics, to develop their understanding of mathematics as an integrated discipline, and to strengthen their oral and written communication skills in mathematics. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

MAT 4313. Applied Combinatorics. (3-0) 3 Credit Hours.

Prerequisite: MAT 1224. Permutations, combinations, arrangements, selections, distributions, generating functions, inclusion-exclusion principle.

MAT 4323. Applied Graph Theory. (3-0) 3 Credit Hours.

Prerequisite: MAT 1224. Isomorphism, planarity, computer representation of graphs, covering circuits and graph colorings, Euler and Hamiltonian graphs, trees and searching network algorithms (shortest paths, connectivity, traveling salesman, network flow, matching, sorting, etc.).

MAT 4353. Mathematical Foundations of Cryptography. (3-0) 3 Credit Hours.

Prerequisite: MAT 3233 or MAT 4233 or consent of instructor. Congruences and residue class rings, Fermat's Little Theorem, the Euler phi-function, the Chinese Remainder Theorem; complexity; symmetric-key cryptosystems; cyclic groups, primitive roots, discrete logarithms, one-way functions; public-key cryptosystems (Diffie-Hellman key exchange, RSA, Rabin, El Gamal); digital signatures; and other groups (finite fields, elliptic curves).

MAT 4803. Statistical Quality Control. (3-0) 3 Credit Hours.

Prerequisite: STA 3513. Statistical methods are introduced in terms of problems that arise in manufacturing and their applications to the control of manufacturing processes. Topics include control charts and acceptance sampling plans. (Same as STA 4803. Credit cannot be earned for both MAT 4803 and STA 4803.)

MAT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MAT 4953. Special Studies in Mathematics. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MAT 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee. Supervised research and preparation of an honors thesis. May be repeated once with approval.

Mechanical Engineering (ME)

Mechanical Engineering (ME) Courses

ME 1302. Introduction to Mechanical Engineering. (2-0) 2 Credit Hours. (TCCN = ENGR 1201)

Prerequisites: MAT 1073 and completion of or concurrent enrollment WRC 1013. Engineering ethics, principles and fundamentals of engineering design, decision-making processes in cases of mechanical engineering design. (Formerly ME 1301. Credit cannot be earned for both ME 1302 and ME 1301.)

ME 1402. Mechanical Engineering Practice and Graphics. (1-3) 2 Credit Hours. (TCCN = ENGR 1204)

Prerequisites: MAT 1093 and ME 1302. Introduction to engineering graphics: geometric constructions, multi-view drawing, dimensioning, sections, pictorials and auxiliary views. Computer-aided design, generation of mechanical drawings, and design projects. (Formerly ME 1403. Credit cannot be earned for both ME 1402 and ME 1403.) (Formerly titled "Engineering Graphics.")

ME 2173. Numerical Methods. (3-0) 3 Credit Hours.

Prerequisite: EGR 2323. Introduction to the fundamentals of syntax and debugging techniques for interpreted and structured programming languages with an emphasis on engineering applications. Cross-platform interchange of data and use of visualization tools for effective communication of computational results. Error and computer arithmetic, root finding, interpolation and extrapolation, curve-fitting, matrix manipulation, numerical integration, solution methods for systems of linear algebraic equations and differential equations. (Formerly ME 3173. Credit cannot be earned for both ME 3173 and ME 2173.)

ME 3113. Measurements and Instrumentation. (3-1) 3 Credit Hours.

Prerequisites: EE 2213, EGR 2513, PHY 1951, and PHY 1971. Fundamentals of measurement systems, descriptive statistics, probability, error, error propagation, confidence intervals, hypothesis testing, correlation, linear regression, data acquisition.

ME 3244. Materials Engineering and Laboratory. (3-3) 4 Credit Hours.

Prerequisites: CHE 1103 and EGR 2103. Fundamentals in structures, properties, fabrication, and mechanical behavior of engineering materials. Investigation of the properties of engineering materials, with emphasis on metals, sample preparation, metallography, and foundry processes. (Formerly ME 3241 and ME 3243. Credit cannot be earned for ME 3244 and ME 3241/ME 3243. Prior completion of ME 3241 and ME 3243 can be substituted for this course.)

ME 3263. Manufacturing Engineering. (3-0) 3 Credit Hours.

Prerequisite: EGR 2513. An integrated coverage of mechanical properties of materials, tolerances, measurement and quality assurance, manufacturing processes, and manufacturing systems, fundamental definitions, design for manufacturing, and mathematical models, hands-on applications related to measurement and manufacturing processes. (Formerly titled "Materials Processing.")

ME 3293. Thermodynamics I. (3-0) 3 Credit Hours.

Prerequisites: EGR 2103 and MAT 1224. Heat, work, equations of state, thermodynamics systems, control volume, first and second laws of thermodynamics, applications of the laws of thermodynamics, reversible and irreversible processes, and introduction to basic thermodynamic cycles.

ME 3323. Mechanical Vibration. (3-0) 3 Credit Hours.

Prerequisites: EGR 2323 and EGR 2513. Free and forced vibrations, single and multiple degree of freedom systems, damping, matrix methods, time-domain and frequency-domain. Applications in the transmission and control of vibration.

ME 3513. Mechanism Design. (3-0) 3 Credit Hours.

Prerequisites: EGR 2513 and ME 1402. Introduction to mechanisms, graphical and linear analytical methods for kinematic synthesis of mechanisms; design of cam follower; gearing fundamentals, ordinary and planetary gear trains; and computer-aided design projects.

ME 3543. Dynamic Systems and Control. (3-0) 3 Credit Hours.

Prerequisites: EE 2213, EGR 2513 and EGR 3323. Introduction to modeling and control of dynamic physical systems, analysis and design of control systems for mechanical, electrical, manufacturing, fluid, and thermal systems. (Formerly ME 4522 and ME 4523. Credit cannot be earned for more than one of the following: ME 3543, ME 4522, or ME 4523.).

ME 3663. Fluid Mechanics. (3-0) 3 Credit Hours.

Prerequisites: EGR 2323, EGR 2513, and concurrent enrollment in ME 3293. Fluid properties, fluid statics, integral and differential analysis of fluid flow, viscous laminar and turbulent flow in conduits, dimensional analysis, boundary layer concepts, drag and lift.

ME 3813. Mechanics of Solids. (3-0) 3 Credit Hours.

Prerequisite: EGR 2103. Internal forces and deformations in solids, stress, strain and their relations, torsion, stresses and deflections in beams, and elastic behavior of columns.

ME 3823. Machine Element Design I. (3-0) 3 Credit Hours.

Prerequisites: ME 1402, ME 3244 (or ME 3241 and ME 3243 in previous catalogs), and ME 3813. Introduction to design of machine elements, pressurized cylinders, press and shrink fits, curved beams and contact stresses, static and fatigue theories of failure, shafts and shaft components, welded and bolted connections, mechanical springs, and computer-aided design projects. (Formerly ME 4423. Credit cannot be earned for both ME 3823 and ME 4423.).

ME 4173. High Performance Computing. (3-0) 3 Credit Hours.

Prerequisite: ME 2173. Introduction to UNIX (login, shell scripts, editors, file permissions), visualization (software tools, data formats), Parallel programming (numerical libraries, Message Passing Interface, Trilinos, GPGPU programming).

ME 4183. Compressible Flow and Propulsion Systems. (3-0) 3 Credit Hours.

Prerequisites: ME 3293 and ME 3663. Application of mass, energy, and force balance to compressible fluids, analysis of one-dimensional steady flow, isentropic flow, adiabatic flow, flow with heat addition, supersonic flow, and shock waves. Introduction to the analysis and design of air-breathing engines for aeronautical transportation. (Formerly EGR 4183. Credit cannot be earned for both ME 4183 and EGR 4183.).

ME 4243. Intermediate Materials Engineering. (3-0) 3 Credit Hours.

Prerequisites: ME 3244 (or ME 3241 and ME 3243 in previous catalogs) and ME 3813. Selected topics in macroscopic and microscopic aspects of the mechanical behavior of metals, ceramics, polymers and composites, introduction to dislocation theory, temperature dependent deformations, engineering failures, and fracture mechanics.

ME 4293. Thermodynamics II. (3-0) 3 Credit Hours.

Prerequisite: ME 3293. Energy and availability analysis, reactive and nonreactive mixtures, moist air properties, psychometric systems and analysis, vapor and gas power cycles, refrigeration and heat-pump cycles, thermodynamic relations, and chemical equilibria.

ME 4313. Heat Transfer. (3-0) 3 Credit Hours.

Prerequisites: EGR 3323, ME 2173 and ME 3663. Generalized potential distribution and gradients, and heat transfer, including transient and steady state conduction, forced and free convection, radiation, and heat exchanger analysis.

ME 4323. Thermal Systems Design. (3-0) 3 Credit Hours.

Prerequisite: ME 4313. Application of basic thermodynamics, fluid mechanics, heat transfer, and computer methods to the design of heat exchangers, coils, fans, pumps, and thermal energy systems.

ME 4343. Heating, Air Conditioning, and Refrigeration Design. (3-0) 3 Credit Hours.

Prerequisites: ME 4293 and ME 4313. Moist air properties, human comfort, solar radiation, heating loads, design selection, construction, and operation of air conditioning equipment, and duct design.

ME 4373. Separation Processes. (3-0) 3 Credit Hours.

Prerequisites: ME 4293 and ME 4313. Rate- and equilibrium-controlled separation, mass transfer, phase equilibrium, absorption, distillation, extraction, adsorption and membranes.

ME 4433. Machine Element Design II. (3-0) 3 Credit Hours.

Prerequisite: ME 3823. Design of spur, helical, bevel and worm gears; journal and rolling bearings; design of couplings, clutches, brakes, and flywheels; and computer-aided design project.

ME 4543. Mechatronics. (2-3) 3 Credit Hours.

Prerequisites: ME 3113 and ME 3543. Study of electromechanical design as coupled with control systems; integration of sensors; topics in input signal conditions. Lab will include use of modern engineering software and hardware.

ME 4553. Automotive Vehicle Dynamics. (3-0) 3 Credit Hours.

Prerequisites: EGR 2323 and EGR 2513. Dynamics and control of automotive systems, handling, tires, suspension, steering, and aerodynamic forces.

ME 4563. Computer Integrated Manufacturing. (3-0) 3 Credit Hours.

Prerequisite: ME 3263. Fundamental concepts and models related to computer-aided design, computer-aided process planning, computer-aided manufacturing, production planning and scheduling, and manufacturing execution systems. Laboratory work includes computer-aided applications and programming of automated production equipment.

ME 4573. Facilities Planning and Design. (3-0) 3 Credit Hours.

Prerequisite: ME 3263. Product, process, and schedule design, flow, space, and activity relationships, material handling, layout planning models and design algorithms, and warehouse operations.

ME 4583. Enterprise Process Engineering. (3-0) 3 Credit Hours.

Prerequisite: ME 3263. Fundamental concepts, methodologies, and tools for the design, engineering and continuous improvement of enterprises.

Topics include Six Sigma for process design and improvement, lean manufacturing fundamentals, value-stream mapping, performance evaluation, and other contemporary enterprise process engineering approaches.

ME 4593. Alternative Energy Sources. (3-0) 3 Credit Hours.

Prerequisites: ME 4293 and ME 4313. Solar, nuclear, wind, hydrogen, and geothermal energy sources. Resources, production, utilization, economics, sustainability, and environmental considerations. (Formerly ME 3593. Credit cannot be earned for both ME 3593 and ME 4593.).

ME 4603. Finite Element Analysis. (3-0) 3 Credit Hours.

Prerequisites: EGR 3323, ME 2173 and ME 3823. Finite element method fundamentals, advanced geometric modeling of mechanical components and systems, and finite element modeling of components.

ME 4613. Power Plant System Design. (3-0) 3 Credit Hours.

Prerequisites: ME 4293 and ME 4313. Application of thermodynamics and fluid mechanics to the design of vapor and gas-turbine power plant systems including boilers, condensers, turbines, pumps, compressors, and cooling towers.

ME 4623. Internal Combustion Engines. (3-0) 3 Credit Hours.

Prerequisites: ME 4293 and ME 4313. Application of thermodynamic cycles in design, analysis, and modeling of internal combustion engines including spark-ignition and compression-ignition cycles, thermochemistry, fuels, combustion, emissions, and pollution.

ME 4643. Pressure Vessel and Piping Design. (3-0) 3 Credit Hours.

Prerequisites: ME 3663 and ME 3813. ASME Section XIII Boiler and Pressure Vessel code, inspection, maintenance, repair, and modification of pressure vessels. Piping design and construction.

ME 4653. Oil and Gas Engineering and Reservoir Geomechanics. (3-0) 3 Credit Hours.

Prerequisites: ME 3663 and ME 3813. Introduction to the oil and gas industry, Measurement; deformation mechanisms in rock; rock fracture description and analysis; wellbore stresses and failure; wellbore stability analysis; fault stability analysis; depletion-induced reservoir deformation; and hydraulic fracturing.

ME 4723. Reliability and Quality Control in Engineering Design. (3-0) 3 Credit Hours.

Prerequisite: ME 3113. Introduction to statistical methods in reliability and probabilistic engineering design methodology, statistical quality control and inspection, life prediction and testing, and design optimization.

ME 4733. Mechanical Engineering Laboratory. (2-3) 3 Credit Hours.

Prerequisites: ME 3113, ME 3813, and ME 4293. Completion of or concurrent enrollment in ME 4313 is required. Transducers and signal conditioning, strain, force, acceleration, controls, vibration, rotating machinery, fluid flow, heat transfer, thermodynamics, internal combustion engines, and design of experiments. (Formerly ME 4702. Credit cannot be earned for ME 4702 and ME 4733. Prior completion of ME 4702 and ME 4802 can be substituted for this course.)

ME 4773. Fundamentals of Robotics. (3-0) 3 Credit Hours.

Prerequisite: ME 3543. Fundamental analysis and control methods of robot manipulators will be taught in this course. Kinematics and dynamics of robotic systems will be studied. Project for the design and analysis of a robotic system with practical application is expected.

ME 4812. Senior Design I. (2-0) 2 Credit Hours.

Prerequisites: ME 3263, ME 3543 and ME 3823. Completion of or concurrent enrollment in ME 4313, ME 4543 (or ME 3513 in previous catalogs) and ME 4733 required. Design project proposals, computer-aided synthesis, analysis, and modeling of an open-ended problem development and presentation of conceptual designs. Industrial cooperation is encouraged. (Formerly ME 4811. Credit cannot be earned for both ME 4811 and ME 4812.)

ME 4813. Senior Design II. (2-3) 3 Credit Hours.

Prerequisite: ME 4812. Development of a working design of an instructor-approved design project using computer-aided synthesis, analysis, modeling, and optimization methods. Industrial cooperation encouraged. Considerations of safety, reliability, environmental, and economic constraints, and ethical and social impacts.

ME 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ME 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ME 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

ME 4953. Special Studies in Mechanical Engineering. (3-0) 3 Credit Hours.

Prerequisite: Will depend on the topic. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 9 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

ME 4963. Mechanical Engineering Applications to Biomedical Systems. (3-0) 3 Credit Hours.

Prerequisites: EGR 2513, ME 3663 and ME 3813. Applications of dynamics, solid mechanics and fluid mechanics to biomedical systems. (Formerly titled "Bioengineering.")

Media Studies (MES)

Media Studies (MES) Courses

MES 3113. Film Studies. (3-0) 3 Credit Hours.

Prerequisite: WRC 1023 or the equivalent. CSH 2113 recommended. Advanced analysis of selected films according to genre, director, or national cinema. May be repeated for credit when topics vary.

MES 3333. Digital Video Production. (2-3) 3 Credit Hours.

Prerequisite: WRC 1023 or the equivalent. Theory and practice of digital video production for the humanities. Writing a storyboard, shooting a story, and editing using professional equipment. May be repeated for credit when topics vary.

MES 4333. Digital Video Practicum. (3-2) 3 Credit Hours.

Prerequisite: MES 3333 or consent of instructor. Advanced digital video production for the humanities. Specialized community service projects. May be repeated for credit when topics vary.

Medical Humanities (MHU)

Medical Humanities (MHU) Courses

MHU 2013. Introduction to Medical Humanities. (3-0) 3 Credit Hours.

Survey of the human aspects of medical practice as addressed through the social sciences, arts, and humanities. Examines concepts of illness and wellness as influenced by the study of history, psychology, cross-cultural variation, ethics, and aesthetics. Emphasis on systems of meaning, representation, reflective practice, and the dynamics of patient-provider interactions. Provides a history of the field of medical humanities and outlines current and future career paths.

MHU 4813. Seminar in Medical Humanities. (3-0) 3 Credit Hours.

Examines current theories, critiques, and applied approaches in medical humanities. Reviews case studies exemplifying contrasting or competing definitions of health, wellness, illness, embodiment, disease, and disability. Sample topics include body image, diagnosis, narrative medicine, and professionalization. May be taught from different perspectives depending upon faculty expertise and interests.

Mexican American Studies (MAS)

Mexican American Studies (MAS) Courses

MAS 2013. Introduction to Chicano(a) Studies. (3-0) 3 Credit Hours. (TCCN = HUMA 1305)

An introduction to the field of Chicano(a) studies from its inception to the present. Chicano(a) studies and scholarship are explored through multidisciplinary concepts, theory, and methodologies, providing differing interpretations of the Chicano and Chicana experience in the United States. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly BBL 2013. Credit cannot be earned for both MAS 2013 and BBL 2013.)

MAS 2023. Latino Cultural Expressions. (3-0) 3 Credit Hours. (TCCN = HUMA 1311)

An introductory overview of Hispanic visual, performing, and folk arts from their origins in the Iberian peninsula, through the later blending of cultures and their parallelism during revolutionary periods, to contemporary Latino expressions in the United States. May be applied toward the Core Curriculum requirement in Creative Arts. (Same as BBL 2023. Credit cannot be earned for both MAS 2023 and BBL 2023.)

MAS 2033. Multiculturalism in the Southwest. (3-0) 3 Credit Hours.

A panoramic study of the concept of culture and the social dynamics of exchange among those ethnic groups that determine the multicultural milieu of the Southwest. Examination of cultural differences and similarities among all peoples of the region and the role of multiculturalism in politics, education, economics, religion, and everyday life. (Same as BBL 2033. Credit cannot be earned for both MAS 2033 and BBL 2033.)

MAS 3003. Musical Mestizaje. (3-0) 3 Credit Hours.

Designed to examine Mexican American experience at the borders where the cultural form of music becomes a way of expressing cultural contact, tension, conflict as well as accommodation and resistance. Music becomes a site of excavating issues of inheritance as well as understanding the dynamics of creative expression. Course reflects historical and social contexts to engage the cultural production of the genres and themes of music found in Mexican American communities.

MAS 3013. Chicana/o Queer Communities, Identities and Theories. (3-0) 3 Credit Hours.

Through an intersectional lens that addresses gender and sexuality in conjunction with race and class, this course examines concepts of identity, community, and belonging for and by Mexican American lesbian, bisexual, transgender, intersex and queer communities. Topics may include language, migration, history, health, family and kinship.

MAS 3023. Historical Legacies: Chicanas/os in Education. (3-0) 3 Credit Hours.

This course presents key texts that are central to the study of Chicanas/os in education. This course critically examines the historical legacies and contemporary experiences of Chicana/o children and youth in U.S. educational institutions. The course will present various theoretical perspectives that problematize the pervasive history of educational inequality and patterns of academic attainment and achievement throughout the educational pipeline. Special attention will be given to the pervasive history of segregation, tracking, language oppression, and assimilationist ideologies and practices, as well as the current struggles for educational justice in Chicana/o schools and communities.

MAS 3033. Mexican Americans in the Southwest. (3-0) 3 Credit Hours.

Historical foundations of the United States–Mexico biculturalism in the Southwest. An examination of the historical forces that created and shaped the Mexican American people as a bicultural community. Attention is given to Mexican American contributions in arts, economics, literature, and politics. (Same as BBL 3033. Credit cannot be earned for both MAS 3033 and BBL 3033.)

MAS 3043. Social Psychological Considerations in Mexican American Communities. (3-0) 3 Credit Hours.

A cross-cultural and social psychological study of human development, interethnic communication, stereotyping, learning styles, or other topics relevant to the bicultural setting. (Same as BBL 3043. Credit cannot be earned for both MAS 3043 and BBL 3043.)

MAS 3413. Mexican American Family. (3-0) 3 Credit Hours.

This course offers an examination of the social status of Mexican Americans and their relationship to the dominant society. Issues may include the position of Mexican Americans in economic, political, and status hierarchies and the major factors limiting mobility within these systems. (Formerly BBL 3413. Same as SOC 3413. Credit cannot be earned for more than one of the following: BBL 3413, MAS 3413, or SOC 3413.)

MAS 4083. Research Seminar in Mexican American Studies. (3-0) 3 Credit Hours.

Provides students the opportunity to compare, contrast, and integrate social science theory and methods, and guides students in the conduct of sociocultural research in the Mexican American community. Emphasis will be given to qualitative and ethnographic methods and theory. (Formerly BBL 4083. Credit cannot be earned for both MAS 4083 and BBL 4083.)

MAS 4931. Internship in Mexican American Studies. (0-0) 1 Credit Hour.

A supervised experience, relevant to the student's program of study within selected community organizations and agencies. Must be taken on a credit/no-credit basis.

MAS 4932. Internship in Mexican American Studies. (0-0) 2 Credit Hours.

A supervised experience, relevant to the student's program of study within selected community organizations and agencies. Must be taken on a credit/no-credit basis.

MAS 4933. Internship in Mexican American Studies. (0-0) 3 Credit Hours.

A supervised experience, relevant to the student's program of study within selected community organizations and agencies. Must be taken on a credit/no-credit basis.

MAS 4953. Special Studies in Mexican American Studies. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. To apply credit earned in MAS 4953 toward a minor, consent of the academic advisor is required.

MAS 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for Honors in Mexican American Studies during their last two semesters; completion of honors examination and consent of the Honors College. Supervised research and preparation of an honors thesis. May be repeated once with thesis advisor's approval.

Military Science (MSC)

Military Science (MSC) Courses

MSC 1001. Introduction to Army ROTC Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 1012. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis.

MSC 1012. Introduction to Army ROTC. (2-0) 2 Credit Hours.

Corequisite: Concurrent enrollment in MSC 1001. Introduces personal challenges and competencies that are critical for effective leadership. Focuses on the personal development of life skills such as goal setting, time management, physical fitness, and stress management as they relate to leadership, officership, and the Army profession. Increase self-confidence through team study and activities in basic drill, rappelling, leadership reaction course, first aid, making presentations, and basic marksmanship. Learn fundamental concepts of professional leadership in classroom and outdoor laboratory environments. Students attend two hours of lecture, a required two hours of leadership laboratory (MSC 1001) plus participate in organized physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended. (Formerly MSC 1011. Credit cannot be earned for both MSC 1012 and MSC 1011.).

MSC 1101. Introduction to Tactical Leadership Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 1122. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis.

MSC 1122. Introduction to Tactical Leadership. (2-0) 2 Credit Hours.

Corequisite: Concurrent enrollment in MSC 1101. Overviews leadership fundamentals such as setting direction, problem solving, listening, presenting briefs, providing feedback, and using effective writing skills. Students will explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises and will learn and apply principles of effective leading. Reinforce self-confidence through participation in physically and mentally challenging exercises with upper-division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to leadership effectiveness. Students attend two hours of lecture, a required two hours of leadership laboratory (MSC 1101) plus participate in organized physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended. (Formerly MSC 1021. Credit cannot be earned for both MSC 1122 and MSC 1021.).

MSC 2011. Foundations of Leadership Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 2012. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis.

MSC 2012. Foundations of Leadership. (2-0) 2 Credit Hours.

Corequisite: Concurrent enrollment in MSC 2011. Explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of the Army leadership framework (trait and behavior theories). Students practice aspects of personal motivation and team building in the context of planning, executing, and assessing team exercises and participating in leadership labs. Focus is on continued development of the knowledge of leadership attributes and core leader competencies through an understanding of Army rank, structure, duties and basic aspects of oral presentations, concise writing, advanced first aid, land navigation, basic rifle marksmanship and basic military squad tactics. Students attend lecture and a required leadership laboratory (MSC 2011) plus participate in physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended.

MSC 2021. Foundations of Tactical Leadership Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 2022. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis.

MSC 2022. Foundations of Tactical Leadership. (2-0) 2 Credit Hours.

Corequisite: Concurrent enrollment in MSC 2021. Examines the challenges of leading tactical teams in the complex Contemporary Operating Environment (COE). The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of military operations. MSC 2022 provides a smooth transition into MSC 3013. Students have an opportunity to develop greater self-awareness as they assess their own leadership styles and practice communication and team-building skills. COE case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios. Students attend lecture and a required leadership laboratory (MSC 2021) plus participate in physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended.

MSC 3011. Leading Small Organizations I Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 3013. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis.

MSC 3013. Leading Small Organizations I. (3-0) 3 Credit Hours.

Prerequisites: MSC 1012, MSC 1122, MSC 2012, and MSC 2022, or consent of instructor. Concurrent enrollment in MSC 3011. Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead in increasingly complex situations. Uses small unit tactics and opportunities to plan and conduct training for lower-division students both to develop such skills and as vehicles for practicing leading. Students attend three hours of lecture, two hours of leadership laboratory (MSC 3011) and organized physical fitness training weekly. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended.

MSC 3021. Leading Small Organizations II Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 3023. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis.

MSC 3023. Leading Small Organizations II. (3-0) 3 Credit Hours.

Prerequisite: MSC 3013 or consent of instructor. Concurrent enrollment in MSC 3021. Continues methodology of MSC 3013. Students will analyze tasks and prepare written or oral guidance for team members to accomplish tasks. Students will also delegate tasks and supervise; plan for and adapt to the unexpected in organizations under stress; examine and apply lessons from leadership case studies; and examine the importance of ethical decision making in setting a positive climate that enhances team performance. Students attend three hours of lecture, two hours of leadership laboratory (MSC 3021) and organized physical fitness training weekly. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended.

MSC 3033. American Military History. (3-0) 3 Credit Hours.

Prerequisites: MSC 1012, MSC 1122, MSC 2012, and MSC 2022, or consent of instructor. A comprehensive, but brief account of the US Army from past to present. Integrates the basic knowledge of American military history into the future officer's education. This is an Army standardized, mandatory course that is a part of pre-commissioning training for contracted US Army ROTC cadets. Employs American military history as a tool for studying military professionalism and applying critical-thinking skills and decision-making skills to military problems. Analyzes the definition of Military History, the theory and practice of war, and the American Military System as an intellectual framework for applying critical-thinking skills and problem-solving skills to the study of historical military problems.

MSC 4011. Adaptive Leadership Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 4013. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis.

MSC 4013. Adaptive Leadership. (3-0) 3 Credit Hours.

Prerequisite: MSC 3023 or consent of instructor. Concurrent enrollment in MSC 4011. Students will plan, conduct, and evaluate activities of the ROTC cadet organization; articulate goals and put plans into action; assess organizational cohesion and develop strategies to improve it; develop confidence in leadership skills and resource management; learn and apply various Army policies and programs. Students will study how Army values and leader ethics are applied in the Contemporary Operating Environment and how these values and ethics are relevant to everyday life. Students will study the Army officer's role in the Uniform Code of Military Justice, the counseling of subordinates, administrative actions and the management of an Army officer's career. Students attend three hours of lecture, two hours of leadership laboratory (MSC 4011) and organized physical fitness training weekly. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended.

MSC 4021. Leadership in a Complex World Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 4023. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis.

MSC 4023. Leadership in a Complex World. (3-0) 3 Credit Hours.

Prerequisite: MSC 4013 or consent of instructor. Concurrent enrollment in MSC 4021. Continues the methodology from MSC 4013. Students will identify and resolve ethical dilemmas; refine counseling and motivating techniques; examine tradition and law as related to leadership as an Army officer; prepare for a future as a successful Army lieutenant. Students attend three hours of lecture, two hours of leadership laboratory (MSC 4021) and organized physical fitness training weekly. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended.

MSC 4033. Practical Leadership. (3-0) 3 Credit Hours.

Prerequisite: MSC 4023 or consent of instructor. Performance-oriented instruction and preparation for commissioning. Additional development of students' ability to plan, coordinate, and direct the efforts of Army small-unit organizations in the execution of tactical missions; planning and execution of leadership laboratories.

Multidisciplinary Studies (MDS)

Multidisciplinary Studies (MDS) Courses

MDS 4983. Senior Seminar for Multidisciplinary Studies. (3-0) 3 Credit Hours.

Prerequisites: Declared major in Multidisciplinary Studies in semester of graduation and permission of the Multidisciplinary Studies Program Coordinator. The seminar surveys topics in ethics, reinforces writing and communication skills through oral and written presentations and discussions, demonstrates student's progress through a capstone portfolio, and culminates in a senior project approved by the instructor.

Museum Studies (MSM)

Museum Studies (MSM) Courses

MSM 3003. Fundamentals of Museum Studies. (3-0) 3 Credit Hours.

A general overview of the field of museum studies, including curatorship, collections management, fieldwork, exhibits, interpretation, educational and public programming, marketing, fundraising, and administration.

MSM 4813. Topics in Museum Science. (3-0) 3 Credit Hours.

Prerequisite: MSM 3003 or consent of instructor. Advanced examination of one or more topics in the museum profession. May be repeated for credit when topics vary.

MSM 4913. Independent Study in Museum Studies. (0-0) 3 Credit Hours.

Prerequisite: consent of instructor. Scholarly research under the supervision of a faculty member on method, theory, or practice in the museum profession. May be repeated for credit, but not more than 6 hours of independent study, regardless of discipline, may apply to the Museum Studies minor or a bachelor's degree.

MSM 4933. Museum Internship. (0-0) 3 Credit Hours.

Prerequisite: consent of instructor. Supervised work at a museum in one or more areas of museum studies. Internships in other major or minor disciplines may be substituted for the Museum Internship course when conducted at museums or galleries. May be repeated for credit in the minor, up to 6 hours.

Music (MUS)

Music (MUS) Courses

MUS 1102. Aural Skills I. (2-0) 2 Credit Hours. (TCCN = MUSI 1216)

Enrollment is limited to music majors and minors. Offers the opportunity for training in sight-singing, aural skills, and keyboard application. Should be taken concurrently with MUS 1112. May not be attempted more than three times.

MUS 1112. Basic Skills of Music I. (2-1) 2 Credit Hours. (TCCN = MUSI 1211)

Enrollment is limited to music majors and minors. A survey of fundamentals and concepts of music. Emphasis on rudiments and melody, with an introduction to harmony. Materials from a variety of style periods are studied. Should be taken concurrently with MUS 1102. May not be attempted more than three times.

MUS 1122. Aural Skills II. (2-0) 2 Credit Hours. (TCCN = MUSI 1217)

Prerequisite: MUS 1102 or the equivalent. Enrollment is limited to music majors and minors. Offers the opportunity to continue training in sight-singing and aural skills, with emphasis on rhythmic, melodic, and harmonic materials. Should be taken concurrently with MUS 1132. May not be attempted more than three times.

MUS 1132. Basic Skills of Music II. (2-1) 2 Credit Hours. (TCCN = MUSI 1212)

Prerequisite: MUS 1112 or the equivalent. Enrollment is limited to music majors and minors. Offers the opportunity for development of harmonic analytical and writing skills. Analytical techniques are applied to music from a variety of style periods, and includes an introduction to small forms. May not be attempted more than three times.

MUS 1141. Beginning Composition. (0-0) 1 Credit Hour. (TCCN = MUSI 1286)

Prerequisites: MUS 1102 and MUS 1112 or their equivalents. An introduction to the fundamentals and techniques of composition, including development of listening skills, notation, and improvisational aspects of generating original creative ideas. Seminar attendance is required.

MUS 1511. Music Performance-Secondary Instrument. (0-0) 1 Credit Hour.

Enrollment is limited to music majors. Placement by audition. Private instruction for students desiring to or required to study the following as a secondary instrument: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit.

MUS 1512. Music Performance-Private Instruction. (0-0) 2 Credit Hours.

Enrollment is limited to music majors. Placement by audition. Private instruction for all first-semester students, both freshmen and transfer students, desiring to or required to study the following instruments: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Students must earn a grade of "C-" or higher to progress to MUS 1542. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of two semesters.

MUS 1521. Class Piano 1. (1-1) 1 Credit Hour. (TCCN = MUSI 1181)

Prerequisite: Music major or consent of instructor. Focuses on the development of functional keyboard skills for the non-keyboard music major. Emphases include solo and ensemble repertoire, technique, sight reading, transposition, harmonization, improvisation, and accompanying.

MUS 1531. Class Voice. (1-0) 1 Credit Hour. (TCCN = MUSI 1183)

For students with no previous vocal training. Offers the opportunity for development of fundamentals of voice technique through in-class performances of suitable songs. May be repeated for credit.

MUS 1542. Music Performance-Private Instruction I. (0-0) 2 Credit Hours.

Prerequisite: Successful completion of MUS 1512 with a grade of "C-" or better or placement by audition. Limited to music majors. Private instruction for students desiring to or required to study the following instruments: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters.

MUS 1552. Functional Piano for Keyboard Principals. (0-0) 2 Credit Hours.

Prerequisite: Music major with piano or organ as the principal instrument or consent of instructor. Offers the opportunity for development of keyboard skills, harmonization, transposition, and improvisation of accompaniments to melodies, sight-reading, score reading, and multiple-part reading.

MUS 1621. Class Piano 2. (1-1) 1 Credit Hour.

Prerequisite: MUS 1521 or the equivalent. Continues the development of functional keyboard skills for the non-keyboard music major. Emphases include solo and ensemble repertoire, technique, sight reading, transposition, harmonization, improvisation, and accompanying.

MUS 2001. Concert Music. (1-0) 1 Credit Hour.

Prerequisite: Music major or minor. Required attendance at a selected number of approved music concerts and recitals as determined by the Department of Music. May be repeated for credit.

MUS 2102. Aural Skills III. (2-0) 2 Credit Hours. (TCCN = MUSI 2216)

Prerequisite: MUS 1122 or the equivalent. Enrollment is limited to music majors. Offers the opportunity to continue training in sight-singing and aural skills, with emphasis on rhythmic, melodic, and harmonic materials applied to the literature and theory drawn from MUS 2152. Should be taken concurrently with MUS 2152. May not be attempted more than three times.

MUS 2112. Aural Skills IV. (2-0) 2 Credit Hours. (TCCN = MUSI 2217)

Prerequisite: MUS 2102 or the equivalent. Enrollment is limited to music majors. Application of skills to materials drawn from MUS 2162 Basic Skills of Music IV. Should be taken concurrently with MUS 2162. May not be attempted more than three times.

MUS 2122. Aural Skills Review. (2-0) 2 Credit Hours.

Review of aural skills materials for incoming transfer students and other music majors. Designed to satisfy deficiencies indicated by the aural skills proficiency exam. Offers an overview of sight-singing methodology and ear training techniques, with an emphasis on rhythmic, melodic, and harmonic materials drawn from common-practice literature.

MUS 2132. Introduction to Improvisation. (0-0) 2 Credit Hours. (TCCN = MUSI 1263)

Prerequisites: Music major status or concurrent enrollment in MUS 3771 or MUS 4581: Jazz Combos. Private instruction for development of creative skills applied to melodic, rhythmic, and harmonic elaboration techniques adapted to the student's instrument. Laboratory attendance may be required. May be repeated for credit a maximum of three semesters.

MUS 2141. Composition II. (0-0) 1 Credit Hour.

Prerequisites: MUS 1102, MUS 1112, and MUS 1141. Private study of the fundamentals of composition through small forms. Seminar attendance is required. May be repeated for credit. (Formerly MUS 2142. Credit cannot be earned for both MUS 2141 and MUS 2142.)

MUS 2152. Basic Skills of Music III. (2-1) 2 Credit Hours. (TCCN = MUSI 2211)

Prerequisite: MUS 1132 or the equivalent. Enrollment is limited to music majors. A survey of the chromatic materials of music with an emphasis on writing and analytical skills. Includes an introduction to large-scale form. Should be taken concurrently with MUS 2102. May not be attempted more than three times.

MUS 2162. Basic Skills of Music IV. (2-1) 2 Credit Hours. (TCCN = MUSI 2212)

Prerequisite: MUS 2152 or the equivalent. Enrollment is limited to music majors. The continued study of chromatic materials of music, large-scale forms, and an introduction to analytical techniques for early 20th-century music. Should be taken concurrently with MUS 2112. May not be attempted more than three times.

MUS 2183. Jazz Skills. (0-0) 3 Credit Hours.

Prerequisites: MUS 1122 and MUS 1132, or their equivalents. The study of harmonic, melodic, rhythmic and formal elements of jazz as applied to improvisation, performance, arranging, and composition. (Formerly MUS 2182. Credit may not be earned for both MUS 2183 and MUS 2182.)

MUS 2232. Introduction to Guitar Literature. (0-0) 2 Credit Hours.

Prerequisite: Music major status. An introductory study of the history and literature of the modern concert guitar and its historical predecessors. Designed to improve students' understanding of the solo repertoire for their instrument throughout the 16th–20th centuries.

MUS 2243. World Music in Society. (3-0) 3 Credit Hours. (TCCN = MUSI 1307)

A survey of the music cultures of Africa, the Americas, Asia and Oceania. Music traditions are studied from a perspective that emphasizes music as an integral part of society and culture. May be applied toward the Core Curriculum requirement in Creative Arts. (Formerly MUS 2252. Credit may not be earned for both MUS 2243 and MUS 2252.)

MUS 2263. Introduction to the Music Industry. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor required for non-music majors. A survey of the various structures and facets of the modern American music industry, focusing on how music and commerce have intersected in our society throughout the 20th century and into the present. Topics include intellectual property (copyright, licensing, publishing), artist management, concert promotion, arts administration, recording industry, broadcast music, and music on the Internet.

MUS 2273. Introduction to Music Nonprofit Organizations. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor required for non-music majors or non-music minors. An introduction to the world of nonprofit music organizations, with an emphasis on classical music presentation. Focused on strategies of management, financial structuring, artistic direction, and marketing, primarily within the context of opera companies, symphony orchestras, ballet companies, and chamber music organizations. Includes an examination of the challenges of audience development and discussion of classical music's role in contemporary society.

MUS 2403. Conducting I. (3-1) 3 Credit Hours.

Prerequisite: MUS 1132 or the equivalent. Fundamentals of beat patterns, score mechanics and score reading, regular and irregular meters, gesture design, left-hand cueing, and rehearsal techniques. Instrumental Music Laboratory attendance may be required.

MUS 2421. Class Piano 3. (1-1) 1 Credit Hour.

Prerequisite: MUS 1621 or the equivalent. Continues the development of functional keyboard skills for the non-keyboard music major. Emphases include solo and ensemble repertoire, technique, sight reading, transposition, harmonization, improvisation, and accompanying. Also focuses on developing multiple-part sight reading skills.

MUS 2501. Accompanying. (0-2) 1 Credit Hour.

Enrollment is limited to music majors. The study of the skills and aesthetic principles needed to accompany vocal and instrumental music. Practical experience may be accomplished through accompanying. Intended for piano principals and piano performance majors. May be repeated for credit.

MUS 2521. Class Piano 4. (1-1) 1 Credit Hour.

Prerequisite: MUS 2421 or the equivalent. Continues the development of functional keyboard skills for the non-keyboard music major. Emphases include solo and ensemble repertoire, technique, sight reading, transposition, harmonization, improvisation, and accompanying. Also focuses on developing multiple-part sight reading skills.

MUS 2542. Music Performance-Private Instruction II. (0-0) 2 Credit Hours.

Prerequisite: MUS 1542 or placement by audition. Enrollment is limited to music majors. Private instruction for students desiring to or required to study the following instruments: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters.

MUS 2601. Diction Survey. (1-1) 1 Credit Hour. (TCCN = MUSI 1162)

Enrollment is limited to music majors. A survey of English and foreign language pronunciation as applied to performance. (Formerly MUS 3501. Credit cannot be earned for both MUS 2601 and MUS 3501.)

MUS 2603. Beginning Guitar. (3-0) 3 Credit Hours.

An introductory course intended primarily for the non-Music major. Emphasis will be on music in the first position (through the fourth fret) while students learn technical aspects as defined by the early 19th-century guitar masters.

MUS 2613. Intermediate Guitar. (3-0) 3 Credit Hours.

Prerequisite: MUS 2603 or the equivalent. Designed primarily for the non-Music major. Continued study of rudimentary classical guitar repertoire and basic elements of classical guitar technique.

MUS 2623. Fundamentals of Music for the Non-Music Major. (3-0) 3 Credit Hours. (TCCN = MUSI 1303)

A study of traditional music notation and the fundamentals of music theory. Topics will include music reading, rhythmic notation, intervals, scales, triads, and key signatures. Emphasis is placed on the historical development of music notation and music theoretical systems and their applications to both classical and popular music. May be applied toward the Core Curriculum requirement in Creative Arts.

MUS 2633. American Roots Music. (3-0) 3 Credit Hours. (TCCN = MUSI 1310)

A survey of Blues, Country and Western, Gospel, Cajun, Zydeco, Conjunto, Tejano, Reggae, Native American, and other uniquely American genres of music that evolved from regional, home-grown traditions into the mass market phenomenon of American popular music today. Designed to provide the opportunity for students to increase their awareness of the diversity of American traditional music, from the pioneers who originated the styles to the contemporary popular music artists influenced by them. May be applied toward the Core Curriculum requirement in Creative Arts.

MUS 2663. History and Styles of Jazz. (3-0) 3 Credit Hours. (TCCN = MUSI 1310)

A survey of the evolution of jazz styles, contributions of important performers, and musical techniques involved in the creation and performance of jazz music. May be applied toward the Core Curriculum requirement in Creative Arts.

MUS 2673. History and Styles of Rock. (3-0) 3 Credit Hours. (TCCN = MUSI 1310)

A survey of the evolution of rock styles, contributions of important performers, and musical techniques involved in the creation and performance of rock music. May be applied toward the Core Curriculum requirement in Creative Arts.

MUS 2683. Masterpieces of Music. (3-0) 3 Credit Hours. (TCCN = MUSI 1306)

A study of individual works selected from and representative of the musical traditions of the Western world. Includes background information on social setting and function, historical importance, aesthetics, and composers' biographies. May be applied toward the Core Curriculum requirement in Creative Arts.

MUS 2693. The Music of Latin America and the Caribbean. (3-0) 3 Credit Hours. (TCCN = MUSI 1307)

Surveys the folk, popular, and classical musical traditions of Latin America, with special emphasis on the principal regions of Mexico, Brazil, Argentina, and the Andes. May be applied toward the Core Curriculum requirement in Creative Arts. (Formerly MUS 1213. Credit cannot be earned for both MUS 2693 and MUS 1213.)

MUS 2743. Music and Film. (3-0) 3 Credit Hours. (TCCN = MUSI 1306)

A survey of the evolving role of music in film. Students will have the opportunity to develop an understanding of how film music is created, manufactured, and consumed by exploring various creative, technological, industrial, economic, historical, social, and cultural factors. May be applied toward the Core Curriculum requirement in Creative Arts.

MUS 3013. Digital Music Production. (3-0) 3 Credit Hours.

Survey of concepts and development of skills related to current computer-based music production. Topics include MIDI and audio sequencing, tonal synthesis, acoustics, digital audio editing, sound processing, basic live recording, and music distribution. This is the entry course for UTSA's Certificate in Music Technology program. (Formerly MUS 3313. Credit cannot be earned for both MUS 3013 and MUS 3313.)

MUS 3103. Audio Technology I. (3-0) 3 Credit Hours.

Fundamental concepts of digital and analog audio recording. Topics will include a historical survey of audio technology, critical listening, terminology, digital audio systems, signal flow, microphone selection and placement, techniques for live stereo recording, basic processing and effects, and an introduction to current standard workflows for recording, editing, and mixing. (Credit cannot be earned for both MUS 3103 and MUS 3153 under the title Audio Technology I.)

MUS 3113. Tonal Analysis Review. (3-0) 3 Credit Hours.

Prerequisite: MUS 2162 or the equivalent. Review of tonal analysis for incoming transfer students and other music majors. Designed to satisfy deficiencies indicated by the music theory proficiency exam. Offers an overview of harmony and form, with an emphasis on binary form, ternary form, rondo form, sonata-allegro form, and contrapuntal techniques.

MUS 3123. Introduction to Electronic and Computer Music. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor required for non-music majors. Lecture course serving as a conceptual and practical introduction to digital audio workstation software, synthesizers, sequencers, and other audio hardware and software for the purpose of creating original compositions, with an emphasis on sound-processing techniques and timbral manipulation. Includes a survey of the history and literature of electronic music.

MUS 3133. Analysis of Twentieth-Century Music. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, or their equivalents. Analysis of forms and structures drawn from the literature and repertoire of the 20th century. Beginning with a review of late tonal practices, such styles and techniques as Impressionism, atonality, serialism, and pre- and post-serial tonality are studied in depth.

MUS 3143. Orchestration. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, or their equivalents. Applied instrumentation emphasizing idiomatic scoring for various orchestral and wind combinations with an approach to writing for full orchestra and symphonic band.

MUS 3153. Conducting II. (3-1) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2403, or their equivalents. Offers the opportunity for continued training in conducting, emphasizing score reading, rehearsal techniques, expressive conducting, score interpretation, and repertoire. Topics include Choral Conducting and Instrumental Conducting. For instrumental topic, Instrumental Music Laboratory attendance may be required. (Formerly MUS 2413. Credit cannot be earned for both MUS 3153 and MUS 2413.)

MUS 3162. Composition III. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2141, and MUS 2162. Private study in applied composition, with emphasis on expansion of musical materials to larger forms. Seminar attendance is required. May be repeated for credit.

MUS 3163. Audio Technology II. (3-0) 3 Credit Hours.

Prerequisite: MUS 3103 or consent of instructor. A continuation of Audio Technology I. Topics include preproduction, session planning, detailed topics in microphone selection and placement, editing and manipulation of recorded sound; advanced applications for equalization, compression, reverb, delay, and other effects; integration of software synthesis and sequencing in the audio workstation environment; automation and mixing. The course emphasizes hands-on application of learned concepts in a studio environment.

MUS 3213. Music in Civilization I. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, or their equivalents. A study of the development of musical styles and literatures from antiquity to 1750, with emphasis on the parallels and influences of art, architecture, literature, and theater on musical art. In addition, the adaptation and influences of non-Western traditions and styles on Western art music will be considered.

MUS 3223. Music in Civilization II. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, or their equivalents. A study of the development of musical styles and literatures from the Enlightenment to the present, with emphasis on the parallels and influences of art, architecture, literature, and theater on musical art. In addition, the adaptation and influences of non-Western traditions and styles on Western art music will be considered.

MUS 3232. Wind and Percussion Literature. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of music for the concert band at all grade levels including method books for individual instruction. The course will focus on investigating repertoire for different levels of educational groups and/or individuals, from beginning band through more advanced wind ensembles.

MUS 3242. String Literature. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of music literature and analysis at an advanced level in such topics as orchestral literature, both string and full orchestra, as well as chamber music and solo repertoire. The course will focus on investigating repertoire for different levels of educational groups and/or individuals, from beginning string orchestras through more advanced high school full symphonies. Leveled repertoire lists such as the PML will be considered and used as references.

MUS 3252. Topics in Music Literature. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of music literature at an advanced level. May be repeated for credit when topics vary. (Formerly titled "Advanced Studies in Music Literature and Analysis.")

MUS 3263. Music Since 1900. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. Designed to provide the student with a working knowledge of the music, terms and techniques of art music written from 1900 to the present day. The focus will be on specific compositions emphasizing questions of genre, form, and compositional style but also drawing upon the musicological literature to explore a variety of broader historical and cultural issues.

MUS 3272. Choral Literature. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A survey of major choral composers, genres, works, and styles. Topics include Renaissance to Baroque Choral Literature, and Classical to 20th-Century Choral Literature. May be repeated for credit when topics vary.

MUS 3282. Vocal Literature. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of vocal literature and stylistic considerations at an advanced level in such topics as the American Art Song, the German Lied and the French Mélodie.

MUS 3292. Operatic Literature. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of the historical significance and literature of the opera form from its precursors through the present time.

MUS 3312. Music Technology for Music Educators. (2-1) 2 Credit Hours.

Prerequisite: Enrollment is limited to music majors. Designed specifically for music studies majors. Topics include sequencing, notation, digital musical instruments, music instruction software, communication technologies, and digital media for the classroom. Students build online portfolios of technology projects for assessment and later use in job placement. (Formerly MUS 3311. Credit cannot be earned for both MUS 3312 and MUS 3311.)

MUS 3322. Keyboard Literature. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of keyboard literature and analysis at an advanced level. Topics include Piano, Organ, and Harpsichord solo and chamber literature. Course is taught at two levels, Level I and Level II. May be repeated for credit when topics or levels vary.

MUS 3332. Advanced Guitar Literature. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2232, and MUS 2162. Advanced study of stylistic development in concert guitar literature, including solo and concerto repertoire from the 18th to the 21st centuries. Designed for guitar performance majors, but open to all music majors interested in classical guitar.

MUS 3342. Wind and Percussion Literature for Performance Majors. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of wind or percussion literature and analysis at an advanced level. Topics include Solo and Chamber Literature, and Orchestral and Wind Band Literature. May be repeated for credit when topics vary.

MUS 3352. String Literature for Performance Majors. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of string literature and analysis at an advanced level, covering such elements as orchestral literature, chamber music, and solo repertoire for each individual student's instrument, recital planning and preparation, excerpt study and preparation for auditions, score reading, and sight-reading skills. Topics include Solo and Chamber Literature, and Orchestral Literature. May be repeated for credit when topics vary.

MUS 3401. Brass Instruments. (1-2) 1 Credit Hour.

Prerequisite: MUS 1132 or the equivalent. Enrollment is limited to music majors. A study of playing techniques, selection of materials, and maintenance of brass instruments. Instrumental Music Laboratory attendance may be required.

MUS 3413. Psychology of Music. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. An approach to the foundations of music from different disciplinary perspectives. Focuses on music in contemporary society; current research from anthropology, biology, psychology, sociology, philosophy and aesthetics, economics, and ethics will be presented. (Formerly titled "Foundations of Music.").

MUS 3421. Vocal Techniques for Instrumental Majors. (1-1) 1 Credit Hour.

Enrollment is limited to music majors. A study of basic techniques of vocal production and vocal pedagogy, with a particular emphasis on voice mutation, voice classification, vocal health, the selection of appropriate repertoire and teaching of singing to young children, junior high and high school students. Designed to provide instrumental music majors with the opportunity to develop experience and familiarity with vocal music.

MUS 3431. Woodwind Instruments. (1-2) 1 Credit Hour.

Prerequisite: MUS 1132 or the equivalent. Enrollment is limited to music majors. A study of the playing techniques and instructional methods of woodwind instruments. Instrumental Music Laboratory attendance may be required.

MUS 3453. Teaching Elementary Music. (3-0) 3 Credit Hours.

Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors. A study of the essential elements of music as they relate to children. (Formerly titled "Music Studies I.").

MUS 3463. Teaching Secondary Vocal Music. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2152. Enrollment is limited to music majors. Designed to develop skills necessary to teach secondary level vocal and general music. (Formerly titled "Music Studies II.").

MUS 3471. String Instruments. (1-2) 1 Credit Hour.

Prerequisite: MUS 1132 or the equivalent. Enrollment is limited to music majors. A study of playing techniques, pedagogy, selection of materials, and maintenance of string instruments. Instrumental Music Laboratory attendance may be required.

MUS 3481. Percussion Instruments. (1-2) 1 Credit Hour.

Prerequisite: MUS 1132 or the equivalent. Enrollment is limited to music majors. A study of playing techniques, pedagogy, selection of materials, and maintenance of percussion instruments. Instrumental Music Laboratory attendance may be required.

MUS 3491. Instrumental Techniques for Voice Majors. (1-1) 1 Credit Hour.

Enrollment is limited to music majors. A study of playing techniques, pedagogy, selection of materials, and maintenance of percussion, woodwind, brass, and string instruments. Designed to meet the needs of voice majors to have the opportunity to develop experience and familiarity with orchestral and band instruments. Instrumental Music Laboratory may be required.

MUS 3511. Diction for Singers. (1-1) 1 Credit Hour.

Enrollment is limited to music majors. An intensive study of language pronunciation as applied to performance. Topics include English, French, Italian, and German. May be repeated for credit.

MUS 3523. Music and the Internet. (3-0) 3 Credit Hours.

Prerequisites: MUS 1122, MUS 1132, MUS 2263, or their equivalents. Enrollment is limited to music majors and minors. A study of the history and impact of the internet in the contemporary music world, with an emphasis on online alternatives to traditional structures of music distribution. Topics could include issues of copyright infringement, technological challenges to music ownership, and an overview of the development of online music.

MUS 3532. Music Performance-Private Instruction III. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, and successful completion of two semesters of MUS 2542 or placement by audition. Enrollment is limited to music majors. Private instruction for students desiring to or required to study the following instruments: bassoon, clarinet, contrabass, cornet, flute, classical guitar, electric bass, euphonium, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters.

MUS 3543. Music Performance-Private Instruction IV. (0-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, and successful completion of two semesters of MUS 2542 or placement by audition. Enrollment is limited to students accepted to upper-division standing in the Performance emphasis of the Bachelor of Music degree program. Private instruction at an advanced level in bassoon, clarinet, contrabass, cornet, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters.

MUS 3583. Advanced Improvisation. (0-0) 3 Credit Hours.

Prerequisites: MUS 2132 and MUS 2183, or their equivalents.
Private instruction in applied improvisation on a student's instrument, emphasizing melodic creativity and performance within standard literature as well as newly composed materials. May be repeated for credit. Laboratory attendance may be required.

MUS 3613. Entrepreneurship in Music. (3-0) 3 Credit Hours.

Prerequisite: MUS 2263. Open to music majors and minors only.
An advanced study of innovation in the business of music, including historical examination of social trends, technological advances, legal issues, and commercial practices that have influenced the development of the music industry in both the fine arts and popular culture. Strategies for career building in music business are explored with an emphasis on knowledge and skills that support entrepreneurial activities in music. (Formerly titled "American Music and Culture.").

MUS 3701. Chamber Singers. (0-3) 1 Credit Hour.

Prerequisite: Consent of instructor by audition. An ensemble specializing in the performance of outstanding chamber choral music from the Middle Ages to the present. Previous musical experience and reading ability required. The ensemble performs on and off campus. May be repeated for credit. (Formerly titled "Madrigal Singers.").

MUS 3711. Mariachi Ensemble. (0-3) 1 Credit Hour.

Open to all students by audition. Ensemble rehearses and performs the music repertoire of the Mexican folk mariachi tradition. May be repeated for credit.

MUS 3712. Concert Choir. (0-5) 2 Credit Hours.

Open to all students by audition. Select mixed ensemble open to all students by audition. This group performs a variety of repertoire from all historical periods. May be repeated for credit.

MUS 3721. UTSA Men's Glee Club. (0-3) 1 Credit Hour.

Open to all male students without audition. No previous choral experience is necessary. Many types of music are studied, and the repertoire is moderate in difficulty. May be repeated for credit. (Formerly titled "UTSA Chorus.").

MUS 3722. Women's Choir. (0-5) 2 Credit Hours.

Open to all female students by audition. Select women's ensemble open to all students by audition. This group performs a variety of repertoire from all historical periods. May be repeated for credit.

MUS 3731. UTSA University Band. (0-3) 1 Credit Hour.

Open to all students by audition. Ensemble rehearses and performs standard repertoire of concert band music. May be repeated for credit.

MUS 3741. Chamber Orchestra. (0-3) 1 Credit Hour.

Open to all string students by audition. This ensemble will study, rehearse, and perform literature from the string orchestra repertoire. May be repeated for credit.

MUS 3742. UTSA Wind Ensemble. (0-5) 2 Credit Hours.

Open to all students by audition. The wind ensemble studies, rehearses, and performs the repertoire for various combinations of wind instruments. May be repeated for credit.

MUS 3752. UTSA Symphonic Band. (0-5) 2 Credit Hours.

Open to all students by audition. Ensemble performs standard repertoire for the full symphonic band. May be repeated for credit.

MUS 3762. UTSA Orchestra. (0-5) 2 Credit Hours.

Open to all students by audition. The UTSA Orchestra studies, rehearses, and performs literature from the standard orchestral repertoire. May be repeated for credit. (Formerly MUS 3761.).

MUS 3771. Jazz Ensemble. (0-3) 1 Credit Hour.

Open to all students by audition. Ensemble specializes in the performance of the various streams of jazz and other music appropriate to stage bands, jazz ensembles, and vocal jazz groups. May be repeated for credit.

MUS 3792. Lyric Theatre. (0-5) 2 Credit Hours.

Open to all students by audition. The study and performance of opera and other types of musical theater from the Baroque period to the present. May be repeated for credit. (Formerly titled "Opera Workshop.").

MUS 3802. UTSA Marching Band. (0-5) 2 Credit Hours.

Open to all students by audition. Rehearses and performs music and marching drills for appearances at public events on and off campus. Participation at all performances is required in addition to regularly scheduled rehearsals. May be repeated for credit. (Formerly MUS 3801.).

MUS 4113. Counterpoint. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, or their equivalents. Study of contrapuntal techniques of the 16th and 18th centuries. Topics include melodic line and motive, cadence, imitation, treatment of consonance and dissonance, species counterpoint, invention, canon, and fugue. Emphasis is placed on analysis and composition, with discussion of application to contemporary music. (Formerly titled "Composition with Contrapuntal Techniques.").

MUS 4142. Composition IV. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 3162, or consent of instructor. Writing in the larger forms for small and large ensembles and electronic media. Seminar attendance is required. May be repeated for credit.

MUS 4153. Audio Technology III. (3-0) 3 Credit Hours.

Prerequisite: MUS 3163 or consent of instructor. Advanced recording and mixing techniques, master preparation, delivery formats, synchronization, complex session planning and management, the role and responsibilities of the producer, large-scale project planning and budgeting. Students are required to complete several projects to a high professional standard.

MUS 4163. Topics in Music Theory. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, or their equivalents. Specialized instruction in advanced music theory. Topics include Schenkerian Analysis, advanced pitch-class set theory, pedagogy of music theory, analysis and performance, and genre, period and/or composer studies. May be repeated for credit when topics vary.

MUS 4183. Jazz Composition and Arranging. (0-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2183, or their equivalents. Private study in applied jazz composition and arranging, emphasizing writing for large jazz ensemble and studio orchestra. May be repeated for credit.

MUS 4263. Topics in Music History. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, MUS 3213, and MUS 3223. A study of works and styles appropriate to the stylistic period of the topic. Topics include Middle Ages; Renaissance; Baroque Period; Classic Period; Romantic Period; Twentieth Century; and Music Practices and Styles. May be repeated for credit when topics vary. Topics may be taken concurrently.

MUS 4433. Multimedia Production. (3-0) 3 Credit Hours.

An overview of theories, skills, and hardware and software components of current multimedia production. Topics include digital image editing, digital sound editing, vector graphics and animation, multimedia integration, media Web page development, and interactive programming in actionscript and JavaScript. Aspects of artistic design are also introduced. Emphasis is placed on hands-on development of useful, effective products for instructional and commercial applications.

MUS 4452. Marching Band Techniques. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. A study of the repertoire, materials, instructional methods, administration, and maneuvers used by marching bands.

MUS 4531. Vocal Pedagogy I. (1-1) 1 Credit Hour.

Prerequisites: MUS 2112 and MUS 2162. Survey of techniques, practices, and materials related to the development of teaching of voice, including anatomy, physiology, acoustics, and the development of the human voice. (Formerly titled "Music Pedagogy I.").

MUS 4532. Music Pedagogy. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162. Survey of techniques, practices, and materials related to the development and execution of music instruction. Review of materials for beginning, intermediate, and advanced students. Topics include Strings, Brass, Woodwinds, Percussion, Guitar, Piano, Organ, and Instrumental Ensemble. May be repeated for credit. Instrumental Ensemble topic requires successful completion of MUS 3401 and MUS 3431. Depending upon topic, Instrumental Music Laboratory attendance may be required.

MUS 4541. Vocal Pedagogy II. (1-1) 1 Credit Hour.

Prerequisites: MUS 2112 and MUS 2162. Practical application of techniques, practices, and materials related to the development and teaching of voice, including repertoire selection, supervised teaching, applying vocal pedagogy principles to group settings, and introducing students to voice technology. (Formerly titled "Music Pedagogy II.").

MUS 4543. Music Performance-Private Instruction V. (0-0) 3 Credit Hours.

Prerequisites: MUS 2112 and MUS 2162, successful completion of two semesters of MUS 3543 or the equivalent, and placement by audition. Enrollment is limited to students accepted to upper-division standing in the Performance emphasis of the Bachelor of Music degree program. Private instruction at an advanced level in bassoon, clarinet, contrabass, cornet, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters. (Formerly MUS 4544.).

MUS 4552. Supervised Student Teaching. (2-1) 2 Credit Hours.

Prerequisite: Successful completion of MUS 4532 or consent of instructor. Guided teaching of beginner and intermediate level students through supervised scenarios designed by the instructor. This course offers students the opportunity to apply teaching techniques and focus on problem-solving strategies within private or group settings. May be repeated for credit.

MUS 4561. Senior Recital. (0-0) 1 Credit Hour.

Prerequisites: MUS 2112, MUS 2162, and consent of instructor. Concurrent enrollment in MUS 4543 is required of students in the Performance emphasis; concurrent enrollment in MUS 4142 is required of students selecting the Composition emphasis. A public performance presented as a culmination of the student's private instruction.

MUS 4581. Chamber Music. (0-3) 1 Credit Hour.

Open to all students by audition. Designed to offer students the opportunity to gain knowledge of chamber music literature through performance of select repertoire. Instruction in brass ensemble, woodwind ensemble, percussion ensemble, string ensemble, mixed ensemble, jazz combo, vocal ensemble and chamber opera. May be repeated for credit.

MUS 4803. Seminar in Music Marketing. (3-0) 3 Credit Hours.

Prerequisites: MUS 2263, MUS 3613, upper-division standing in Music Marketing, or consent of instructor. An intensive, project-based study of music marketing oriented toward students' specific career interests in the music business and/or arts management.

MUS 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MUS 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MUS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

MUS 4933. Music Marketing Internship. (0-0) 3 Credit Hours.

Prerequisites: MKT 3013, MUS 3613, MUS 4803, grade point average of 2.5 or higher, and permission in writing from the instructor. The opportunity to gain knowledge through experience in the music industry under the supervision of private business professionals. Opportunities will be developed in consultation with the faculty advisor and appropriate business professionals.

MUS 4951. Special Studies in Music. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MUS 4952. Special Studies in Music. (2-0) 2 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MUS 4953. Special Studies in Music. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

MUS 4961. Music Technology Project. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing from the instructor and Certificate Program Director. A guided project in audio or multimedia. Students will have the opportunity to create a product that brings together knowledge of their major discipline with their specific skills in music technology.

Non-profit Management (NPO)

Non-profit Management (NPO) Courses

NPO 3003. Fundraising in Nonprofit Agencies. (3-0) 3 Credit Hours.

Examines methods, techniques, and directed experience in fundraising for nonprofit agencies. Explores relationships with umbrella organizations, government funding, grantsmanship, budget control, and accountability.

NPO 3013. Introduction to Nonprofit Agencies. (3-0) 3 Credit Hours.

An overview of the historical background, development, role, auspices, organization, and purposes of nonprofit agencies. Special emphasis is placed on structure, program, organizational management, planning and stewardship, fundraising, community building, volunteer services, and problems which confront these organizations. NPO 3013 should be taken in the student's first semester in the minor. (Same as PAD 3033. Credit cannot be earned for both NPO 3013 and PAD 3033.).

NPO 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Prior approval required. Independent Study Course Form (available in the department or college advising center) signed by the instructor, the student's undergraduate advisor, Department Chair, and Dean of the College of Public Policy. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated once for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

NPO 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Prior approval required. Independent Study Course Form (available in the department or college advising center) signed by the instructor, the student's undergraduate advisor, Department Chair, and Dean of the College of Public Policy. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated once for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

NPO 4933. Internship in Nonprofit Management. (0-0) 3 Credit Hours.

Prerequisite: Prior approval of Nonprofit Management Internship Coordinator. Supervised experience within selected not-for-profit agencies. Students must complete 150 clock hours of internship for the minor. May be repeated for credit, but not more than 6 semester credit hours may be earned through the internship.

NPO 4936. Internship in Nonprofit Management. (0-0) 6 Credit Hours.

Prerequisite: Prior approval of Nonprofit Management Internship Coordinator. Supervised experience within selected not-for-profit agencies. Students must complete 150 clock hours of internship for the minor. May be repeated for credit, but not more than 6 semester credit hours may be earned through the internship.

NPO 4953. Special Studies in Nonprofit Management. (3-0) 3 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated once for credit, but not more than 6 semester credit hours of special study, regardless of discipline, will apply to a bachelor's degree.

Nutrition and Dietetics (NDT)

Nutrition and Dietetics (NDT) Courses

NDT 2043. Introduction to Nutritional Sciences. (3-0) 3 Credit Hours.

Basic concepts related to the classification and functions of nutrients; the process of digestion, absorption, transport, utilization, and storage of nutrients in humans and the interaction between diet and health. (Credit cannot be earned for both NDT 2043 and BIO 2043.).

NDT 3191. Applied Food Science Practicum. (0-3) 1 Credit Hour.

Corequisite: Concurrent enrollment in NDT 3313 or permission of faculty advisor. The application of concepts related to the chemical, physical, sensory, and nutritional properties of food in menu planning, food preparation, and recipe modification.

NDT 3203. Introduction to Nutrition and Dietetics Careers. (3-0) 3 Credit Hours.

General overview of nutrition and dietetics as a profession, including career opportunities, scope of practice, credentialing, code of ethics, and collaboration with other disciplines. Self-directed modules on medical terminology, word roots, prefixes and suffixes will be integrated into the course content.

NDT 3292. Food Production Practicum. (0-6) 2 Credit Hours.

Corequisite: Concurrent enrollment in NDT 3353 or permission of faculty advisor. Practicum related to the procurement, preparation, and delivery of food in large foodservice operations.

NDT 3313. Applied Food Science. (3-0) 3 Credit Hours.

Prerequisites: NDT 2043 or equivalent and Microbiology; concurrent enrollment in NDT 3191 is recommended. Concepts related to the chemical, physical, sensory, and nutritional properties of food in menu planning, food preparation, and recipe modification.

NDT 3323. Nutrition and Health Assessment. (3-0) 3 Credit Hours.

Prerequisite: NDT 2043 or equivalent. Methods, tools, and interpretation of data in assessing the nutritional status of individuals including dietary, anthropometric, biochemical, and clinical assessment, as well as other measurements of health in individuals and the community.

NDT 3333. Nutrition Counseling and Education. (3-0) 3 Credit Hours.

Prerequisite: NDT 2043 or equivalent. Discussion of theories of learning and behavior modification, models and techniques, communication skills, evaluation methods, and cultural competence in nutrition counseling and education; and application of concepts to facilitate behavioral change.

NDT 3343. Nutrition in the Life Span. (3-0) 3 Credit Hours.

Prerequisites: NDT 2043 or equivalent and Human Physiology. Nutritional needs during various stages of the lifecycle as influenced by physiologic, cultural, and environmental factors.

NDT 3353. Production and Foodservice System Management I. (3-0) 3 Credit Hours.

Prerequisite: NDT 3313 or equivalent; concurrent enrollment in NDT 3292 is recommended. Principles related to the menu planning, food sanitation and safety, procurement, production, marketing, and materials management in foodservice operations.

NDT 3413. Advanced Human Nutrition. (3-0) 3 Credit Hours.

Prerequisites: NDT 2043 or equivalent and Biochemistry. Advanced discussion of nutrient structure, function and interaction, metabolic pathways, and regulation and integration of metabolism.

NDT 4091. Community Service Practicum. (0-3) 1 Credit Hour.

Corequisite: NDT 4333 is recommended or with permission of faculty advisor. Application of learned strategies in meaningful community service through collaborative tasks performed at various community programs. Service learning activities are aimed at enriching the life experiences of students through civic responsibility and community outreach.

NDT 4191. Nutrition Care Process Practicum. (0-3) 1 Credit Hour.

Corequisite: Concurrent enrollment in NDT 4353 is required. A problem-based approach to dietetics practice using case simulations and studies; application of basic nutritional assessment skills, nutritional diagnosis, intervention, and monitoring in different settings; practice skills in counseling and nutrition education.

NDT 4313. Production and Food Service System Management II. (3-0) 3 Credit Hours.

Prerequisites: NDT 3353 and NDT 3292 or equivalent. Theories and principles related to the foodservice, systems management including leadership, decision-making, human resources, and financial management of operations.

NDT 4323. Medical Nutrition Therapy I. (3-0) 3 Credit Hours.

Prerequisites: NDT 3323 and NDT 3333 or equivalent. Pathophysiology and the application of the nutritional care process in the treatment of simple human diseases and conditions, part 1.

NDT 4333. Community Nutrition. (3-0) 3 Credit Hours.

Nutrition-related issues in public health, various community resources, agencies, and programs involved in health promotion and disease prevention.

NDT 4343. Nutrition in Disease Prevention and Health Promotion. (3-0) 3 Credit Hours.

Prerequisites: NDT 2043 and NDT 4333. An evidence-based analysis as it relates to diet/nutrition in the prevention of chronic diseases; and fundamental concepts in the promotion of health among individuals and groups.

NDT 4353. Medical Nutrition Therapy II. (3-0) 3 Credit Hours.

Prerequisite: NDT 4323. Continuation of Advanced Medical Nutrition I; and review of the pathophysiology and the application of the nutritional care process in the treatment of more complex human disease and conditions.

NDT 4363. Current Issues in Nutrition. (3-0) 3 Credit Hours.

Prerequisite: Must have senior or graduate standing. In-depth discussion and analysis of emerging trends, concepts, and controversies in nutritional sciences, including application of evidence-based principles in the discussion.

NDT 4951. Independent Study in Nutrition and Dietetics. (0-0) 1 Credit Hour.

An exploration of topics of interest to the student in Nutrition and Dietetics. Students work under the close supervision of a faculty member to conduct research, intense study, or a project related to the selected topic. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

NDT 4952. Independent Study in Nutrition and Dietetics. (0-0) 2 Credit Hours.

An exploration of topics of interest to the student in Nutrition and Dietetics. Students work under the close supervision of a faculty member to conduct research, intense study, or a project related to the selected topic. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

NDT 4953. Independent Study in Nutrition and Dietetics. (0-0) 3 Credit Hours.

An exploration of topics of interest to the student in Nutrition and Dietetics. Students work under the close supervision of a faculty member to conduct research, intense study, or a project related to the selected topic. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Philosophy (PHI)

Philosophy (PHI) Courses

PHI 1043. Critical Thinking. (3-0) 3 Credit Hours. (TCCN = PHIL 2303)

Introduces students to principles of informal reasoning, especially in practical contexts. Topics may include: forms of reasoning, decision making, organizing data, forming strategies, giving reasons, inductive reasoning, informal fallacies, and obstacles to sound thinking (perceptual, cultural, emotional, intellectual, and expressive) may also be addressed. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

PHI 2013. Basic Philosophical Problems. (3-0) 3 Credit Hours. (TCCN = PHIL 1301)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Introduction to philosophy through general problems in metaphysics, epistemology, ethics, political philosophy, and philosophy of religion; emphasis on the writings of philosophers of various historical periods, especially as these doctrines apply to contemporary problems.

PHI 2023. Introduction to Ancient Philosophy. (3-0) 3 Credit Hours. (TCCN = PHIL 2316)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Introduction to ancient philosophy through the study of Plato, Aristotle, Epicurus, and others; emphasis on the Greek contribution to the moral and political ideas of the Western world. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

PHI 2033. Introduction to Early Modern Philosophy. (3-0) 3 Credit Hours. (TCCN = PHIL 2317)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Introduction to early modern philosophy from the Renaissance to the Enlightenment through the study of Descartes, Locke, Berkeley, Hume, Spinoza, Leibniz, Kant or others. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

PHI 2043. Introductory Logic. (3-0) 3 Credit Hours. (TCCN = PHIL 2303)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Introduces students to some of the modern formal systems used to distinguish between good and bad forms of reasoning in either or both of the deductive or inductive realms. Topics may include: translation from natural to formal languages, probability theory, scientific inductive reasoning, Bayesian reasoning, propositional calculus, predicate calculus, other kinds of formal deductive reasoning (e.g., modal, deontic or belief logics), natural deduction and/or other formal proof methods, problems in philosophical logic (denoting, elementary meta-logic, consistency and completeness of formal systems, elementary model theory etc.). May be applied toward the Core Curriculum requirement in the Component Area Option.

PHI 2063. Philosophy of Law. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of the major issues in the philosophical foundations of law. Topics may include the nature of law, the interpretation of law, the limits of legal regulation, the nature of the obligation to obey the law, the justification of punishment, and a variety of ethical issues that arise in legal contexts. Recommended for pre-law students.

PHI 2073. Philosophy of Art. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of major philosophical theories of art, beauty, and aesthetic judgment, with emphasis on such problems as form and structure, communication in art, and meaning in aesthetic judgment. May be applied toward the Core Curriculum requirement in Creative Arts. (Formerly PHI 3053. Credit cannot be earned for both PHI 2073 and PHI 3053.).

PHI 2123. Contemporary Moral Issues. (3-0) 3 Credit Hours. (TCCN = PHIL 2306)

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of major moral theories and how they afford a rational approach to specific moral issues and a rational basis for resolving moral conflict. Emphasis may be placed on medical, social, engineering and business ethics. May not be repeated for credit. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly titled "Moral Issues in Contemporary America.").

PHI 3013. Philosophy of Religion. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of traditional religious beliefs and such concepts as faith and knowledge, mysticism and theology, the existence and nature of God, and the relation of religion to experience and social life.

PHI 3033. Philosophy of Science. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of major issues in the philosophical foundations of the natural and social sciences, including scientific explanation, laws and theories, probability and induction, and the relation of scientific inquiry to the Western philosophical tradition.

PHI 3073. Asian Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of the philosophical and religious traditions of the East, with emphasis on various schools such as Vedanta, Buddhism, Confucianism, and Taoism.

PHI 3213. Ethics. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of ethical theory and of the nature and scope of ethical discourse, with emphasis on the concepts of good, human happiness, self-realization, virtue, duty, responsibility, and the means-ends relationship. Reading will include selected classical and contemporary texts.

PHI 3223. Approaches to Knowledge and Reality. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of the interrelations between the theory of knowledge and theory of reality, with emphasis on the nature and scope of human knowledge, sensation and understanding, truth and error, change and causality, possibility and actuality, and meaning and existence. Reading will include selected classical and contemporary texts.

PHI 3303. Nineteenth-Century Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of some of the major figures and topics in nineteenth-century philosophy and its intellectual background, including (but not limited to) these figures: Kant, Maimon, Bentham, Fichte, Schelling, Schopenhauer, Hegel, Kierkegaard, Marx, Mill, Nietzsche, Peirce, James, Dewey, Emerson, Thoreau; and these topics: philosophical aspects of German romanticism, idealism, utilitarianism, materialism, pragmatism, transcendentalism.

PHI 3343. Issues and Movements in Contemporary Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Sustained study of one or more specific issues or movements from the end of the nineteenth century to the present day, such as philosophy of language, philosophy of mind, epistemology, political philosophy, theoretical or applied ethics, phenomenology, existentialism, hermeneutics, or postmodernism. May be repeated for credit when topics vary. (Formerly titled "Issues and Movements in Twentieth-Century Philosophy.").

PHI 3403. Philosophy in Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. Examination of important philosophical questions, such as personal identity, the nature of moral value, and the limits of knowledge, as reflected in world literature, including such genres as fiction, drama, and poetry.

PHI 4013. Studies in Individual Philosophers. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Examination of the works of an individual philosopher or of several philosophers studied in relationship to one another. May be repeated for credit when topics vary.

PHI 4113. Contemporary Analytic Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. An in-depth examination of the major trends in the development of the Anglo-American philosophical tradition since its inception at the end of the nineteenth century up to the present day, including the early analysts, the development of logical positivism, and the emergence of nonformal linguistic analysis.

PHI 4123. Contemporary Continental Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. A sustained treatment of the major trends in Continental European philosophy since the end of the nineteenth century up to the present day, including movements such as phenomenology, existentialism, hermeneutics, and postmodernism; emphasis on historical development.

PHI 4333. Philosophy of Language. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. A critical examination of traditional problems dealing with the nature and function of language. Representative issues include analyticity, reference, proper names, metaphorical meaning, and speech-act theory.

PHI 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

PHI 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

PHI 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

PHI 4953. Special Studies in Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

PHI 4973. Seminar for Philosophy Majors. (3-0) 3 Credit Hours.

Prerequisite: 12 upper-division semester credit hours in philosophy or consent of the instructor. An advanced investigation of a single author, text, issue, or problem. Primary emphasis on supervised research on various aspects of the topic. May be repeated once for credit when topics vary.

PHI 4991. Honors Thesis. (0-0) 1 Credit Hour.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee. Supervised research and preparation of an Honors Thesis for the purpose of earning Philosophy Honors. May be repeated once with advisor approval.

PHI 4992. Honors Thesis. (0-0) 2 Credit Hours.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee. Supervised research and preparation of an Honors Thesis for the purpose of earning Philosophy Honors. May be repeated once with advisor approval.

PHI 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Consent of instructor and Department Scholarship and Honors Committee. Supervised research and preparation of an Honors Thesis for the purpose of earning Philosophy Honors. May be repeated once with advisor approval.

Physics (PHY)

Physics (PHY) Courses

PHY 1013. Universes. (3-0) 3 Credit Hours. (TCCN = PHYS 1310)

Prerequisite: MAT 1023 or MAT 1073 or consent of instructor. This course is an introduction to contemporary physics and cosmology. The goal is to study some of the profound discoveries in fundamental physics made during the 20th century, and how they have shaped our modern conception of the universe and of our place in it. Topics discussed include Einstein's theories of special and general relativity, quantum physics, modern cosmology (including the very early universe), and the standard model of elementary particles and forces. May not be applied toward the B.S. degree in Physics without prior written approval of the department. May apply toward the Core Curriculum requirement in Life and Physical Sciences.

PHY 1603. Algebra-based Physics I. (3-0) 3 Credit Hours. (TCCN = PHYS 1301)

Prerequisite: MAT 1023 or MAT 1073 completed with a grade of "C-" or better; concurrent enrollment in PHY 1611 is recommended. Concurrent enrollment in PHY 1611 is recommended. The first of a two-part, algebra-based introduction to physics for biology and other majors that do not require calculus-based physics. Topics include mechanics, thermodynamics, vibrations and waves.

PHY 1611. Algebra-based Physics I Laboratory. (1-4) 1 Credit Hour. (TCCN = PHYS 1101)

Prerequisite: Completion of or concurrent enrollment in PHY 1603. Laboratory accompanies PHY 1603; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1603.

PHY 1623. Algebra-based Physics II. (3-0) 3 Credit Hours. (TCCN = PHYS 1302)

Prerequisite: PHY 1603 completed with a grade of "C-" or better. Concurrent enrollment in PHY 1631 is recommended. The second of a two-part, algebra-based introduction to physics for biology and other majors that do not require calculus-based physics. Topics include electricity, magnetism, optics, relativity, and quantum physics.

PHY 1631. Algebra-based Physics II Laboratory. (1-4) 1 Credit Hour. (TCCN = PHYS 1102)

Prerequisites: PHY 1611 completed with a grade of "C-" or better and completion of or concurrent enrollment in PHY 1623. Laboratory accompanies PHY 1623; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1623.

PHY 1943. Physics for Scientists and Engineers I. (3-1) 3 Credit Hours. (TCCN = PHYS 2325)

Prerequisites: MAT 1193 or MAT 1214 completed with a grade of "C-" or better; completion of or concurrent enrollment in MAT 1224 (if student took MAT 1214) or STA 1403 (if student took MAT 1193) is required. Concurrent enrollment in PHY 1951 is recommended. The first of a two-part, calculus-based introduction to classical physics, designed for physical sciences, mathematics, and engineering majors. Topics include mechanics and Newton's laws, conservation laws, gravitation, rotational motion and rigid bodies, oscillations and waves. Classes meet weekly for three hours of lecture and one hour of recitation. May apply toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly PHY 1903 and PHY 1904. Credit cannot be earned for more than one of the following: PHY 1903, PHY 1904, or PHY 1943.).

PHY 1951. Physics for Scientists and Engineers I Laboratory. (1-4) 1 Credit Hour.

Prerequisite: Completion of, with a grade of "C-" or better, or concurrent enrollment in PHY 1943. Laboratory to accompany PHY 1943; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1943. (Credit cannot be earned for both PHY 1951 and PHY 1911.)

PHY 1963. Physics for Scientists and Engineers II. (3-1) 3 Credit Hours. (TCCN = PHYS 2326)

Prerequisites: PHY 1943 and MAT 1224 (or MAT 1193 and STA 1403) completed with grades of "C-" or better. Concurrent enrollment in PHY 1971 is recommended. The second of a two-part, calculus-based introduction to classical physics, designed for physical sciences, mathematics, and engineering majors. Topics include an introduction to thermal physics, electricity and magnetism, fundamentals of circuits, electromagnetic induction, AC circuits, electromagnetic waves, and Maxwell's equations. Classes meet weekly for three hours of lecture and one hour of recitation. May apply toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly PHY 1923 and PHY 1924. Credit cannot be earned for more than one of the following: PHY 1923, PHY 1924, or PHY 1963.)

PHY 1971. Physics for Scientists and Engineers II Laboratory. (1-4) 1 Credit Hour.

Prerequisites: PHY 1951 completed with a grade of "C-" or better and completion of or concurrent enrollment in PHY 1963. Laboratory to accompany PHY 1963; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1963. (Credit cannot be earned for both PHY 1971 and PHY 1931.)

PHY 2103. Modern Physics. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963, MAT 2214 (completed with a grade of "C-" or better), and completion of or concurrent enrollment in PHY 3203, or consent of instructor. Topics include special relativity, Planck's Radiation Law, elements of quantum mechanics, atomic and molecular structures, spectra, the atomic nucleus, nuclear reactions, and an introduction to elementary particles. (Formerly PHY 3103. Credit cannot be earned for both PHY 2103 and PHY 3103.)

PHY 2111. Modern Physics Laboratory. (1-4) 1 Credit Hour.

Prerequisites: PHY 1963, PHY 1971, and completion of, with a grade of "C-" or better, or concurrent enrollment in PHY 2103. Laboratory to accompany PHY 2103; Uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 2103.

PHY 2823. Mathematical Physics I. (3-0) 3 Credit Hours.

Prerequisites: MAT 2214 and PHY 1963, or consent of instructor. Topics may include vector analysis, introduction to complex variables, Fourier series, ordinary differential equations, linear algebra, and selected application to problems in mechanics and electromagnetic theory. (Formerly PHY 3823. Credit cannot be earned for both PHY 2823 and PHY 3823.)

PHY 3003. Current Research Topics in Physics. (3-0) 3 Credit Hours.

Prerequisites: PHY 1623 and PHY 1631, or PHY 1963 and PHY 1971, completed with a grade of "C-" or better. This course provides students the opportunity to acquire knowledge in contemporary physics through the study and class discussions of selected topics and recent articles. Subjects may include one or more of the following: special and general relativity, elements of quantum mechanics, atomic and molecular physics, solid state, biophysics, nuclear physics, introduction to elementary particles, astrophysics and cosmology, etc. May not be applied toward the B.S. or B.A. degree in Physics without prior written approval of the department.

PHY 3143. Introduction to Computational Physics. (3-0) 3 Credit Hours.

Prerequisites: PHY 2103, PHY 2823, and PHY 3203, or consent of instructor. This course introduces the computer techniques used to solve (and improve the understanding of) physical problems that may be intractable by the standard "pencil and paper" analytical approach. Topics may include numerical solution of differential equations, numerical integration, eigenvalue problems, use of computer algebra systems such as Mathematica or Maple, Monte Carlo methods, computer visualization of physical problems, etc. Examples are taken from classical and quantum mechanics, electrodynamics, statistical mechanics, and solid state physics. May be applied toward a B.S. degree in Physics with approval of the physics advisor. (Formerly titled "Computer Visualization of Physics.")

PHY 3203. Classical Mechanics I. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963 and completion of, with a grade of "C-" or better, or concurrent enrollment in PHY 2823, or consent of instructor. Topics include Newtonian mechanics, oscillations, central-force motion, gravitation, Hamiltonian and Lagrangian dynamics.

PHY 3293. Thermal Physics. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963 and PHY 2823, or consent of instructor. Topics include fundamentals of thermodynamics: entropy, free energy, phase transitions, and thermodynamic potentials; equilibrium, Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac distribution functions; derivation of macroscopic equilibrium thermodynamics from statistical mechanics.

PHY 3313. Materials Physics. (3-0) 3 Credit Hours.

Prerequisite: PHY 2103 or consent of instructor. Topics covered include crystal structure and band theory, density functional theory, a survey of properties of metals and semiconductors, phonons, electron-phonon interaction and superconductivity. (Formerly titled "Solid State Physics.")

PHY 3343. Physics Research Laboratory. (0-6) 3 Credit Hours.

Prerequisites: PHY 1971, PHY 2103 and PHY 2111. This course provides students majoring in physics the opportunity to acquire knowledge in advanced experimental techniques gained through actual participation in real-world physics research labs. (Formerly titled "Advanced Physics Laboratory.")

PHY 3423. Electricity and Magnetism. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963, PHY 2823, and completion of (with a grade of "C-" or better) or concurrent enrollment in MAT 3613, or consent of instructor. Topics include vector calculus, electrostatics, magnetostatics, Faraday's Law, and solutions to Laplace's equation.

PHY 3443. Modern Optics. (3-0) 3 Credit Hours.

Prerequisite: PHY 3423 or consent of instructor. Topics include reflection, refraction, absorption, polarization, and diffraction of light, filters, lasers, nonlinear properties, and Fourier optics.

PHY 3453. Lasers: Theory and Applications. (3-0) 3 Credit Hours.

Prerequisite: PHY 2103 or consent of instructor. Topics include basic principles and designs of lasers: Einstein A and B coefficients; semiclassical laser theory; the phase-coherent nature of the stimulated emission process; and laser efficiency. Various applications of lasers, such as laser-induced fluorescence, light wave communications, holography, surgery, and laser fusion.

PHY 3513. Electrodynamics. (3-0) 3 Credit Hours.

Prerequisites: PHY 2823 and PHY 3423, or consent of instructor. Continuation of the material started in PHY 3423. Topics include Maxwell's equations, electromagnetic waves, wave guides, and radiation from accelerated charges.

PHY 3583. Mathematical Physics II. (3-0) 3 Credit Hours.

Prerequisite: PHY 2823 or consent of instructor. Topics may include series solutions of differential equations, partial differential equations of physics, special functions, integral transforms and introduction to tensor calculus. Applications may include topics in classical and quantum mechanics, electrostatics and electrodynamics. (Formerly PHY 4823. Credit cannot be earned for both PHY 3583 and PHY 4823.)

PHY 3603. Cosmology. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963 and PHY 2103, or consent of instructor. This course is an introduction to physical cosmology. Topics include large-scale structure, expansion and age of the universe; non-Euclidean spaces, big bang cosmology, baryogenesis, nucleosynthesis, and cosmic microwave background radiation; particle physics and inflationary cosmology. (Formerly PHY 4033. Credit cannot be earned for both PHY 3603 and PHY 4033.)

PHY 4013. Relativity: Special and General. (3-0) 3 Credit Hours.

Prerequisites: PHY 2823 and PHY 3203, or consent of instructor. Topics include special relativity: Lorentz transformations, four-vectors, geometry of flat space-time, relativistic dynamics. General relativity: Principle of equivalence, introduction to tensor calculus, Einstein's field equations, Schwarzschild's solution, black holes. Introduction to cosmology.

PHY 4203. Classical Mechanics II. (3-0) 3 Credit Hours.

Prerequisite: PHY 3203 or consent of instructor. Topics may include nonlinear oscillations and chaos, systems of particles and collisions, non-inertial frames, rigid bodies, coupled oscillations, continuous systems and waves.

PHY 4263. Quantum Mechanics I. (3-0) 3 Credit Hours.

Prerequisites: PHY 2103, PHY 3203, MAT 2233, and completion of or concurrent enrollment in PHY 3583, or consent of instructor. Topics include the time-independent Schrodinger equation; operator methods, and the postulates of quantum mechanics; one-dimensional potentials; quantum harmonic oscillator; angular momentum and spin; entanglement and its applications; quantum mechanics in three dimensions and the hydrogen atom.

PHY 4423. Quantum Mechanics II. (3-0) 3 Credit Hours.

Prerequisite: PHY 3583 and PHY 4263, or consent of instructor. Topics include identical particles; time-independent perturbation theory; WKB approximation, time-dependent perturbation theory, the variational principle; the adiabatic approximation and Berry's phase; scattering.

PHY 4563. Biophotonics. (3-0) 3 Credit Hours.

Prerequisite: PHY 3443 or consent of instructor. Topics including basic concepts of optical radiation interacting with biological materials will be covered. Discussion of how the unique properties of photons are exploited to understand the biological structure and its function. Photon absorption and emission in biological materials will be considered to explain their applications, including optical imaging as a noninvasive diagnosis tool, photodynamic therapy (PDT), etc.

PHY 4603. Crystallography and Materials Characterization. (3-0) 3 Credit Hours.

Prerequisite: PHY 2103 or consent of instructor. This course will describe the basics of crystal description and will discuss the characterization methods such as x-ray electron and neutron diffraction.

PHY 4623. Nanotechnology. (3-0) 3 Credit Hours.

Prerequisite: PHY 2103 or consent of instructor. This course will describe the fundamentals of nanotechnology, including properties of matter at the nanometric size.

PHY 4653. Introduction to Micro and Nanotechnology. (3-0) 3 Credit Hours.

Prerequisite: PHY 3423 or consent of instructor. Survey of micro and nanofabrication techniques, scaling laws, mechanical, optical, electrical, magnetic and thermal transducers, microfluidic applications, and nanostructures. Structures produced in the laboratory include microactuators, nanoparticles and microfluidics. This course differs from PHY 4623 in that it is oriented more toward fabrication techniques, rather than fundamentals. (Credit cannot be earned for both PHY 4653 and EE 4523.)

PHY 4703. Renewable Energy: Solar Energy Convertors. (3-0) 3 Credit Hours.

Prerequisite: PHY 2103 or consent of instructor. Topics include physics of photovoltaic cells, semiconductors, solar energy convertors, thin film solar cells, nanostructures for solar energy conversion, dye-sensitized photovoltaic cells, fuels from water and sunlight, strategies for high efficiency.

PHY 4833. Molecular Biophysics. (3-0) 3 Credit Hours.

Prerequisite: PHY 2103 or consent of instructor. Topics include interaction between molecules, principles of thermodynamics (enthalpy, entropy, free energy) applied to biomolecules, Brownian motion and diffusion of molecules, structure of proteins, and principles of quantum mechanics. Biophysical techniques: absorption spectroscopy, transient absorption, fluorescence spectroscopy, fluorescence lifetime, FTIR spectroscopy, linear and circular dichroism, x-ray crystallography, and atomic force microscopy.

PHY 4843. Condensed Matter Theory. (3-0) 3 Credit Hours.

Prerequisites: PHY 3313 and PHY 4263, or consent of instructor. This course offers an introduction to the basic concepts of the quantum condensed matter theory, such as lattice dynamics, elementary excitations, linear response theory, symmetry breaking in Fermi and Bose systems: the physics of superconductivity and superfluidity.

PHY 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree in physics.

PHY 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisite: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree in physics.

PHY 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree in physics.

PHY 4953. Special Studies in Physics. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

PHY 4983. Unifying Concepts in Physics. (3-0) 3 Credit Hours.

Prerequisites: PHY 3293, PHY 3513, PHY 4263, and completion with a grade of "C-" or better or concurrent enrollment in PHY 3583, or consent of instructor. This advanced course is designed to help the students develop a more mature and coherent understanding of the whole discipline through an in-depth exploration of the major branches of physics and their theoretical interconnections.

PHY 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee. Supervised research and preparation of an honors thesis. May be repeated once with approval.

Political Science (POL)

Political Science (POL) Courses

POL 1013. Introduction to American Politics. (3-0) 3 Credit Hours. (TCCN = GOVT 2305)

This course provides an introduction to American politics. The course centers on the fundamental role played by the institutions of American government including Congress, the Presidency, Federal Judiciary, and the Bureaucracy in understanding political dynamics in the United States. The course also examines public opinion and participation as inputs to the institutions of American government, and the mediating role of organizations such as interest groups, the news media, and political parties. Considerable time is devoted to thinking about how these components fit together, and how they shape the nature and importance of citizenship and civic engagement. The course also makes connections between politics at the federal level of government and the political institutions and processes of the state of Texas. This course is required to fulfill the Core Curriculum requirement in Government-Political Science.

POL 1133. Texas Politics and Society. (3-0) 3 Credit Hours. (TCCN = GOVT 2306)

This course involves the analysis of Texas government institutions, political behavior, civic engagement and their political and philosophical foundations. Topics may include discussions of the Texas and U.S. Constitutions; the role of state in the federal system; the diverse demographic, economic, and cultural bases of state politics; elections, interest groups, and elites; and legislative, executive, judicial, urban, and county politics. Considerable time is devoted to thinking about how these components fit together, and how they shape the nature and importance of citizenship and civic engagement in Texas. May be applied toward the Core Curriculum requirement in Government-Political Science.

POL 1213. Civil Rights in Texas and America. (3-0) 3 Credit Hours. (TCCN = GOVT 2306)

This course presents the central elements of traditional introductory political science courses on Texas politics using an alternative, contextual method that teaches students to understand broader political and legal subjects through the lens of civil rights issues and struggles. May be applied toward the Core Curriculum requirement in Government-Political Science. (Formerly titled "Studies in Texas and American Politics.")

POL 2503. Introduction to Political Theory. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The fundamental concepts and problems of politics as viewed by the classical political philosophers and contemporary theorists: justice, power, authority, obligation, freedom, and equality.

POL 2513. Politics and the Administrative Process. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The role of bureaucratic agencies in the formulation and implementation of public policy. Organization theory and administration in the public sector. While the approach of the course is comparative, special emphasis is placed on bureaucracy in the United States. (Formerly titled "Public Administration and Public Policy.")

POL 2533. Introduction to Political Science. (3-0) 3 Credit Hours. (TCCN = GOVT 2304)

Prerequisite: POL 1013. An introduction to the discipline of political science, with particular emphasis devoted to its development from 1880 to the present. Topics may include types of political institutions, uses of political science, participation by political scientists in public affairs or public policy, and career options available to political science majors.

POL 2603. International Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course offers an opportunity for broad study of issues such as North-South and East-West conflicts; international aid and trade through transnational enterprises; economic development and debt; military conflicts and nuclear weapons; new frontiers of oceanic resources, tropical forests, and space; cross-cultural communications; American and foreign values; language issues; and investigations of issues related to a particular nation and culture. (Formerly INS 2403. Same as GLA 2603. Credit cannot be earned for more than one of the following: POL 2603, GLA 2603, or INS 2403.)

POL 2623. Law and Society. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the nature of law, its role in sociopolitical systems, and the institutional components of legal systems. Theories and systems of law examined may include natural, constitutional, common, civil, customary, socialist, and theocratic law. May employ a comparative or historical framework for understanding the variety of institutional arrangements through which systems of law are implemented.

POL 2633. Comparative Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. A comparative examination of the diverse forms, goals, styles, and practices of government in democratic and authoritarian states. Several major polities will be studied in detail. (Same as GLA 2633. Credit cannot be earned for both POL 2633 and GLA 2633.)

POL 2703. Scope and Methods in Political Science. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An introduction to methods of conducting and interpreting research in political science. Topics include principles of the philosophy of science; research designs, statistical concepts and techniques (conceptualization, operationalization, and measurement), and data-gathering procedures; data analysis; and qualitative methods. May also include standard computer packages and secondary data analysis.

POL 3013. The American Legal Process. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An introduction to how the United States legal system is organized and functions. A broad overview of the system and its actors is combined with a focus on particular areas of the law such as domestic relations, personal injury liability litigation, criminal procedure, and alternative dispute resolution.

POL 3033. International Governance. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. International law, organizations, regimes, hierarchies, and norms such as sovereignty govern the international system. These factors help create a world order that limits armed conflict, regulates the world economy, advances environmental protection, and sets human rights standards. This course explains theories of international governance, and compares these perspectives to the analysis of political scientists on the past record and likely future of world order. (Same as GLA 3033. Credit cannot be earned for both POL 3033 and GLA 3033.)

POL 3043. International Human Rights. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course explores the philosophical and political meaning of fundamental human rights; cases of human rights violations (such as genocide in the Holocaust, Rwanda, Kosovo, and Cambodia; the death penalty; female genital mutilation; violations of workers' rights; and torture); and the role that states, international organizations and individuals can play in ending human rights abuses. Course readings may include contemporary theories of human rights and case studies on the enforcement of rights around the world. (Same as GLA 3043. Credit cannot be earned for both POL 3043 and GLA 3043.)

POL 3093. Mexican American Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An opportunity to study Mexican American participation in the electoral process, political and economic institutions, labor organizations, and alternative modes of political action.

POL 3103. Political Ideology. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the theories of justice and political ideologies that shape contemporary political debate. Theories may include liberalism, libertarianism, socialism, communitarianism, neoconservatism, feminism, multiculturalism, environmentalism, and critical race perspectives. Authors may include Rawls, Nozick, Sandel, Okin, Kymlicka, and others.

POL 3113. American Political Thought. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Consideration of American political thought with an emphasis on primary sources. Readings may include the works of Winthrop, Madison, Hamilton, Jefferson, Tocqueville, Calhoun, Lincoln, Melville, Twain, Douglass, DuBois, Addams, Croly, Wilson, Roosevelt, MLK, Malcolm X, and other diverse works of a political, philosophical, or literary nature. May be organized chronologically or topically.

POL 3123. Political Psychology. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Political psychology seeks to explain the behavior of political leaders and mass publics by focusing on the psychological underpinnings of such behavior—their personalities, identities, values, attitudes, and feelings. Attention will be given to the interaction of these factors within different political environments. Topics may include political socialization; personality and political leadership; the psychology of small group decision making; the psychology of mass participation; and affect and cognition in political judgment.

POL 3133. Political Philosophy: Ancient and Medieval. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The major works of Western political philosophy from ancient times to the Renaissance. Writers examined may include Plato, Aristotle, Thucydides, Augustine, and Machiavelli.

POL 3143. Political Philosophy: Modern. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The major works of political philosophy from the Renaissance to the 19th century. Writers examined may include Hobbes, Locke, Rousseau, Hegel, Marx, and Mill.

POL 3153. Political Philosophy: Contemporary. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Political thought from the late 19th century to the present. Topics examined may include contemporary Marxism and critical theory, analytic political theory, positivism and social science, phenomenological approaches, existentialism, and contemporary ethics.

POL 3163. Introduction to Feminist Theory. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. A reading-intensive, upper-level lecture course for political science majors and women's studies majors and minors, introducing students to feminist approaches to theory. Covers feminist critiques of some of the dominant traditions in Western political and social theory as well as ways in which women have begun to construct theories from their own distinctive perspectives within the intersecting hierarchies of race, class, and gender.

POL 3173. Justice and Social Policy. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines social policies relating to the family, education, health care, old age, poverty, and other issues from a normative or social justice perspective. Questions that this course addresses may include: What role, if any, should the state play in the family? What should be the goals of a just education system? Should the United States support universal health care? What responsibility, if any, does society have toward the poor?.

POL 3183. Women in Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the roles and forms of participation of women in contemporary American politics. Topics may include the fight for civil rights and equality; media portrayals of women in politics; women as candidates and as voters; women as elected officials, activists, and political professionals; and women in the military, including theories of gender and war.

POL 3203. African American Political Thought. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the political thought of African Americans from the ante-bellum era to the present. May include the works of Frederick Douglass, Booker T. Washington, W.E.B. DuBois, Ida B. Wells, Marcus Garvey, Richard Wright, Ralph Ellison, Martin Luther King, Jr., Malcolm X, Angela Davis, Cornell West, Shelby Steele, Clarence Thomas, Lani Guinier, Eldridge Cleaver, Barack Obama, and others.

POL 3213. Business and Politics in the Third World. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Business-government relations in Third World nations at a time of deep policy changes initiated in the 1980s. Major theories of business-government relations and their explanatory validity for Third World nations. Particular emphasis may be given to Latin America and Asia and their dynamic emerging markets.

POL 3223. Judicial Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Political behavior of the major participants in the judicial process: judges, attorneys, juries, defendants, and litigants; the political and administrative context of the judicial process; judicial-executive and judicial-legislative relations; the impact of court decisions.

POL 3244. Mass Media and Public Opinion. (3-2) 4 Credit Hours.

Prerequisite: POL 1013. Explores the acquisition of political attitudes, the role of the mass media in society and politics, and the relationship between political attitudes and values, the mass media, and public policy. (Formerly POL 3243. Credit cannot be earned for both POL 3244 and POL 3243.).

POL 3253. Participation and American National Elections. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An introduction to fundamentals of American electoral politics. Topics will include psychological, sociological and economic models of participation, the presidential primary process, the effectiveness of presidential and congressional campaigns on the vote, psychological/sociological and economic models of the presidential and congressional vote, the incumbency advantage in congressional elections, spending in congressional elections, candidate entry, and comparison of House and Senate elections.

POL 3273. Introduction to Global Analysis. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An overview of global conditions and events traditionally subject to analysis by American and international organizations, such as defense and security concerns, economic development, natural resources, human migration, terrorism, arms transfers and weapons proliferation, natural disasters, and international cooperation. Provides an overview of how government and private sector organizations respond and how they engage in defense, diplomacy, intelligence, etc. Discusses the role and operations of analytical functions in government and private organizations. May be taught from different perspectives depending upon faculty expertise and interests. (Same as GLA 3013. Credit cannot be earned for both POL 3273 and GLA 3013.).

POL 3283. The American Presidency. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The U.S. president's role in the American political system. Topics may include the constitutional framework and historical development of presidential powers, presidential personality, and legislative, foreign policy, and war-making powers.

POL 3293. Political Movements. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the origins, mobilizing tactics, and goals of political movements. Movements that may be investigated are the movements of labor, students, women, blacks, environmentalists, and others.

POL 3303. Race, Ethnicity and Public Policy. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The objective of this course is to familiarize students with a range of discourses to understand the complexities of racial and ethnic inequalities in the United States as well as the history and current state of racial and ethnic politics. The course examines the politics and experiences of several groups, such as African Americans, Hispanics, American Indians, and Asian Americans. It also reviews the wide range of public policy issues as they affect, and are affected by, racial and ethnic considerations. (Formerly SSC 3253. Credit cannot be earned for both POL 3303 and SSC 3253.).

POL 3323. Constitutional Law I. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of constitutional questions arising from the institutional features of American government, including electoral processes, separation of powers, and federalism. Emphasizes judicial opinions and other primary sources. May be organized chronologically or topically. (Same as LGS 3323. Credit cannot be earned for both POL 3323 and LGS 3323.).

POL 3333. Constitutional Law II. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of constitutional questions arising from the protection of rights and liberties in the American political system. Topics may include religious liberty, free speech, voting, property rights, due process, equal protection, and rights of the accused. Emphasizes judicial opinions and other primary sources. May be organized chronologically or topically. (Replaces POL 3023 Civil Liberties in American Law and Practice. Same as LGS 3333. Credit cannot be earned for both POL 3333 and LGS 3333.).

POL 3353. Leadership and Elites. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of national political executives in parliamentary and presidential democracies and in authoritarian states. Topics examined may include the selection process, decision making, leadership and bureaucracy, executive-legislative relations, and neocorporatism.

POL 3363. Political Parties and Interest Groups. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the purpose of political parties in the political process. Interest groups and their roles in government and public policy.

POL 3373. The Legislative Process. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the functions, structures, and politics of legislatures and their relationships to their constituencies and other branches of government.

POL 3383. East European Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course provides an overview of politics in Eastern Europe broadly understood as the region of East Central and Southeastern Europe, and the post-Soviet space. It traces the evolution of nation building since the interwar period and the system of communist rule, with a focus on key dimensions of the post-communist transformation of the region. Thematic coverage may include constitutions, political culture, party politics, and Euro-Atlantic integration. (Same as GLA 3383. Credit cannot be earned for POL 3383 and GLA 3383.).

POL 3393. Latin American Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of political institutions and their relationship to social and economic change in Latin America. Profiles of major Latin American countries, such as Mexico, Brazil, Argentina, Peru, and Cuba. (Same as GLA 3393. Credit cannot be earned for both POL 3393 and GLA 3393.).

POL 3403. European Governments. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The interplay of politics with the changing social and economic environment in the advanced industrial societies of Western Europe. Elites, participation, governmental structures, party systems, interest groups, and public policy will be examined in several selected polities and the European Union. (Same as GLA 3403. Credit cannot be earned for both POL 3403 and GLA 3403.)

POL 3413. The Politics of Urban Development. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An opportunity to pursue a political-economic analysis of the metropolis, focusing on the problems and conflicts stemming from urban growth and stagnation. Topics examined may include uneven development, planning, industrial development policy, taxation, and intergovernmental rivalry. Case studies may be drawn from societies other than the United States.

POL 3433. Governments and Politics of Southeast Asia. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. A comparative examination of the political systems of selected Southeast Asian countries and their efforts to deal with political, economic, and social change. Countries studied may include Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. (Same as GLA 3433. Credit cannot be earned for both POL 3433 and GLA 3433.)

POL 3443. Governments and Politics of East Asia. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. A comparative examination of the political systems of selected East Asian countries and their efforts to deal with problems of political, economic, and social change. Countries studied may include the People's Republic of China, the Republic of China, and South Korea. (Same as GLA 3443. Credit cannot be earned for both POL 3443 and GLA 3443.)

POL 3453. The Politics of Mexico. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Background to the contemporary political system of Mexico, including independence, foreign intervention, the Diaz regime, and the 1910–1917 revolution. Other topics may include the constitution, the structure of government, political parties, the presidency, economic development and policy, contemporary leadership, and elites. (Same as GLA 3453. Credit cannot be earned for both POL 3453 and GLA 3453.)

POL 3463. Politics of the Third World. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The political system of various Third World nations. An inquiry into the political and economic problems of these countries, such as development, instability, and political change. (Same as GLA 3463. Credit cannot be earned for both POL 3463 and GLA 3463.)

POL 3483. International Political Economy. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course is an introduction to the institutions and policies that govern international economic relations. Students will study the development of the international economic system as well as controversies over money, trade, and governance. (Same as GLA 3483. Credit cannot be earned for both POL 3483 and GLA 3483.)

POL 3493. Politics of the Middle East. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the past, present, and future of Middle East politics, with an emphasis on culture, politics, religion, and conflicts in the area; the international relations of Middle Eastern countries as well as superpowers' involvement. (Same as GLA 3493. Credit cannot be earned for both POL 3493 and GLA 3493.)

POL 3503. American Foreign Policy since World War II. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Major private interests and public institutions involved in American foreign policy making; public opinion and foreign involvement; specific policies toward international organizations and major world regions. (Same as GLA 3503. Credit cannot be earned for both POL 3503 and GLA 3503.)

POL 3513. International Organizations in World Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Major issues involving international organizations: nationalism and globalism, financing problems, international staffing, voting patterns, peace-keeping, and international conferences. Organizations examined include the United Nations system, regional development banks, alliance systems, cartels, and common markets. (Same as GLA 3513. Credit cannot be earned for both POL 3513 and GLA 3513.)

POL 3523. Force in International Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of modern research into the use of coercion in international relations, specifically economic sanctions, war, and terrorism. Special emphasis will be placed on the causes, trends, and consequences of interstate wars. Peace movements and the technologies of peace making will also be covered. (Same as GLA 3523. Credit cannot be earned for both POL 3523 and GLA 3523.)

POL 3553. The Welfare State in Comparative Perspective. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. History and development of social policies in modern societies. Policy areas covered may include pensions, health care, income maintenance, housing, education, training, and child care. (Formerly titled "Social Policy in Modern Welfare States.")

POL 3563. Current Issues in World Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the issues that divide the people of the world. The structure of contemporary world problems will be studied and possible strategies for the reduction of international conflict will be assessed. Topics may include nuclear proliferation, world hunger, revolution and intervention, transnational enterprises, competing ideologies of international relations, and global ecology. (Same as GLA 3563. Credit cannot be earned for both POL 3563 and GLA 3563.)

POL 3583. Jurisprudence. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An analytic inquiry into the normative, empirical, and ideological underpinnings of law. The functions, nature, and utilities of law in various social and conceptual schemes. Alternatives to formal law and jural dispute settling. (Formerly POL 4153. Credit cannot be earned for both POL 3583 and POL 4153.)

POL 3633. Political Economy. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The political, legal, and ethical context of modern commercial society is explored through the evolution of conceptions of the economy, the individual, and the state. Topics may include the institutional foundations of market societies, ethical and legal impact of business practices, comparisons of national economic policies, the interaction of modern government and economic activity, and the impact of markets on concepts of public and private life. (Same as GLA 3633. Credit cannot be earned for both POL 3633 and GLA 3633.)

POL 3743. Politics in Film. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the role of film in the political process and in the broader political development of the United States and other countries. Students will study how American and international films operate as information, propaganda, and entertainment.

POL 3753. Latino/a Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines political developments in Latino communities. Topics may include political history and organization, Latino naturalization, patterns of participation, political attitudes, and policy-making influence.

POL 3763. Globalization. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines normative and empirical issues in globalization debates, such as the role of states and nonstate actors, the emergence of global civil society, patterns of international development, the influence of international integration on security, health, violence, and intercultural toleration, and the status of institutions for global justice. (Same as GLA 3763 and INS 3763. Credit cannot be earned for more than one of the following: POL 3763, GLA 3763, or INS 3763.).

POL 3773. Experiments in Democratic Renewal. (3-0) 3 Credit Hours.

Prerequisites: POL 1013 and POL 2633 or equivalent. This course examines experiments with popular participation around the world that try new forms of collective action to solve public problems. The setting of these experiments is the double movement of globalization of production and the decentralization of government which have placed a premium on learning processes in contrast to the bureaucratic welfare state and market-based decision-making. The course examines cases in the United States as well as other countries, such as Brazil, Mexico, Canada, India, and others. The course will examine debates about the foundations for as well as the efficacy of new decision-making procedures. Policy cases may include schooling, environmental protection, policing, housing, drug rehabilitation, sweat shop labor, community finance, women's development, and public budgeting.

POL 3783. Democracy and World Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines theories of democratic transition and focuses on the problematics of democratic change throughout the world. Case studies may include political change after the end of the Cold War in the former Communist states, democratic transitions in Latin America, patterns of change in sub-Saharan Africa, the Middle East, and south Asia. (Same as GLA 3783. Credit cannot be earned for both POL 3783 and GLA 3783.) (Formerly titled "Comparative Democratization.").

POL 3823. Politics of Congressional Elections. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An introduction to the politics of congressional elections. Topics include determinants of national election outcomes, campaigning for Congress, strategic behavior, primary elections, the incumbency advantage, money in congressional elections, Senate versus House comparisons, and representation.

POL 4003. Comparative Foreign Policy. (3-0) 3 Credit Hours.

Prerequisite: POL 1013 or consent of instructor. This course is an in-depth comparative examination of the worldviews, institutional processes, political actors, and outcomes of foreign policy-making of several major nation-states. Themes that may be covered are comparative policies for international security, international governance, economic competition, humanitarian action, and regional crises such as the Middle East and African development. (Same as GLA 4003. Credit cannot be earned for both GLA 4003 and POL 4003.).

POL 4013. The Intelligence Community and World Affairs. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Discusses the historical and political developments of intelligence as a component of defense and security policy, mainly in the post-World War II era. Examines the legal foundations of the American national security and intelligence functions, including discussion of accountability and control measures. Emphasizes the role of intelligence in national security policy making, principally conducted by the Executive and Legislative branches in democratic societies. Discusses the main functions of intelligence. (Same as GLA 4013. Credit cannot be earned for both POL 4013 and GLA 4013.).

POL 4023. Techniques in Global Analysis. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Examines various techniques for collecting, analyzing, and communicating information by government and private sector organizations engaged in global analysis. Stresses methodologies for analyzing informational inputs, including strengths and weaknesses of various analytical applications. Studies analytic cultures and pathologies associated with information collection and interpretation, legal and political oversight, accommodation of dissenting views in interpretation and policy debate, and economic, political, and cultural implications of analytical findings. Compares and contrasts analytical methods employed by public and private organizations. May be taught from different perspectives depending upon faculty expertise and interests. (Same as GLA 4123. Credit cannot be earned for both POL 4023 and GLA 4123.).

POL 4123. Legal and Philosophical Reasoning. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An intensive analysis of selected philosophical texts focusing on law and justice. Students are challenged to develop critical reading and thinking skills by studying the texts of philosophers such as Plato, Aristotle, Dworkin, Hart, and/or others who outline difficult arguments and unfamiliar ideas. Emphasis is placed on drawing reasoned conclusions, advocating positions, and expressing oneself in oral and written forms. (Same as LGS 4123. Credit cannot be earned for both POL 4123 and LGS 4123.).

POL 4133. Politics, Law, and Literature. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Examination of fundamental questions of political theory as treated in works of literature. Topics may include authority, law and discretion, the individual and the community, church and state, criminality, and the nature of freedom, especially as these issues emerge in different political orders. Potential works include Greek tragedy and comedy, Dante, Shakespeare, Dostoyevsky, Hawthorne, Melville, Twain, Richard Wright, Ralph Ellison, Flannery O'Connor, Robert Penn Warren, Walker Percy, Saul Bellow, and others.

POL 4143. The European Union. (3-0) 3 Credit Hours.

Prerequisite: POL 1013, POL 2633, POL 3403, or consent of instructor. This course focuses on the historical, political, and intellectual sources of the European Union, the evolution of its institutions, and the effectiveness of its system of governance. Emphasis will be placed on the influence of regional integration on politics and democracy within Europe. The course will consider the construction of united Europe in the context of relations between the EU and member states, European institutions and citizens, and the EU and the world system of politics. (Same as GLA 4143. Credit cannot be earned for both POL 4143 and GLA 4143.).

POL 4203. Current Topics in Global Analysis. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An organized course offering the opportunity for specialized study of topics in such areas as domestic security planning, politics of national defense budgets and products, terrorism, arms transfers and controls, natural disaster preparedness, peacemaking, nuclear weapons proliferation and negotiations, international trade agreements and policies, national security economics, and civil liberties controversies. (Same as GLA 4203. Credit cannot be earned for both POL 4203 and GLA 4203.).

POL 4323. Administrative Law. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. A survey of those aspects of public law of particular relevance to public administration, analyzing such problem areas as the delegation of authority; formal accountability; open records and confidentiality; and responsiveness to democratic value in decision making.

POL 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Independent Study Course Form signed by the instructor, the student's advisor, the Department Chair, and the Dean of the College of Liberal and Fine Arts. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

POL 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Independent Study Course Form signed by the instructor, the student's advisor, the Department Chair, and the Dean of the College of Liberal and Fine Arts. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

POL 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Independent Study Course Form signed by the instructor, the student's advisor, the Department Chair, and the Dean of the College of Liberal and Fine Arts. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

POL 4933. Internship in Political Science. (0-0) 3 Credit Hours.

Prerequisites: Consent of internship coordinator and Department Chair. Supervised experience relevant to political science within selected community organizations. A maximum of 6 semester credit hours may be earned through the internship.

POL 4936. Internship in Political Science. (0-0) 6 Credit Hours.

Prerequisites: Consent of internship coordinator and Department Chair. Supervised experience relevant to political science within selected community organizations. A maximum of 6 semester credit hours may be earned through the internship.

POL 4953. Special Studies in Political Science. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

POL 4973. Seminar in Political Science. (3-0) 3 Credit Hours.

Prerequisites: POL 1013, POL 2703, and 15 semester credit hours in POL, or consent of instructor. The opportunity for an intensive study of a selected topic. Primary emphasis on supervised research on various aspects of the topic. May be repeated for credit when topics vary. Enrollment limited to juniors and seniors majoring in political science.

POL 4983. Research Practicum. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, and the Department Chair. The practicum provides students with the opportunity to focus on a specific research issue having practical applications in geography, governance, politics, or policy. Students participate in a hands-on research experience on the issue in a collective research environment.

POL 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: A minimum grade point average of 3.0 at UTSA, a 3.5 grade point average in the major, and recommendation by a member of the Political Science and Geography faculty. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval. Students who are approved will enroll in the appropriate honors thesis courses during their final two semesters at UTSA. To earn honors, the thesis must be passed by an Honors Committee that will be formed with the recommending faculty and another faculty member. Students interested in enrolling should contact the Department Undergraduate Advisor of Record for additional information.

Psychology (PSY)

Psychology (PSY) Courses

PSY 1013. Introduction to Psychology. (3-0) 3 Credit Hours. (TCCN = PSYC 2301)

Introduction to the study of the mind and behavior in humans and other species with attention to awareness, sensation, perception, emotion, motivation, learning, memory, problem solving, personality, mental and behavioral development, abnormal behavior, and social behavior in group settings. Psychological, social, cultural, institutional, and biological determinants of behavior are considered, together with applications of basic principles based on individuals within a variety of cultural, civic, and public policy contexts. Scientific approaches to the explanation of psychological phenomena are examined critically, with emphasis on empirical research involving the application of the scientific method and quantitative research skills and results to everyday life situations and areas of social responsibility. Communication of empirical results to an appropriate audience is required, as is participation in illustrative research. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. (Credit cannot be earned for both PSY 1013 and PSY 2013.).

PSY 2073. Statistics for Psychology. (3-0) 3 Credit Hours.

Prerequisites: MAT 1023, MAT 1033, MAT 1073, or STA 1053; and one psychology course. The use of statistics in psychological research includes: elementary probability theory; descriptive statistics, including histograms, graphing, and measures of central tendency and dispersion; correlational techniques; binomial and normal distributions; and inferential statistics, including hypothesis testing, effect size estimates, and analysis of variance. (Formerly STA 2073. Credit cannot be earned for both PSY 2073 and STA 2073.).

PSY 2503. Developmental Psychology. (3-0) 3 Credit Hours. (TCCN = PSYC 2314)

Prerequisite: PSY 1013. Problems, methods, major theories, and results in the study of the psychological development of the individual from the prenatal period to old age.

PSY 2513. Abnormal Psychology. (3-0) 3 Credit Hours.

Prerequisite: PSY 1013. Topics may include the dynamics of abnormal behavior with attention to description, causes, and treatment of major psychological disorders, including neuroses, psychoses, personality disorders, and psychosomatic disorders.

PSY 2523. Personality. (3-0) 3 Credit Hours. (TCCN = PSYC 2316)

Prerequisite: PSY 1013. Problems, methods, major theories, and results in the study of development and maintenance of typical modes of behavior and dynamics of adjustment.

PSY 2533. Social Psychology. (3-0) 3 Credit Hours. (TCCN = PSYC 2319)

Prerequisite: PSY 1013. Problems, methods, major theories, and results in the study of social interaction and interpersonal influence; self-identity, attitudes, role behavior, social perception, social influence, and behavior within groups.

PSY 2543. Theories of Learning. (3-0) 3 Credit Hours.

Prerequisites: PSY 1013 or equivalent; and MAT 1023 or equivalent. An examination of major theories about the nature of the learning process. Discussion will focus on the construction and evaluation of models of learning. The practical and theoretical implications of research results for the acquisition, maintenance, modification, and elimination of behavior will be considered. Related memory phenomena and theories may be discussed.

PSY 2573. Psychology of Thought. (3-0) 3 Credit Hours.

Prerequisites: PSY 1013 or equivalent; and MAT 1023 or equivalent. An introduction to the principles of human thought as they relate to memory, comprehension, and problem solving. These principles will be used to analyze the nature of the cognitive strategies and skills that individuals develop to cope with the adaptive challenges they face.

PSY 3023. Social Psychology of Small Groups. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533 and PSY 3403; or consent of instructor. Theory and modern research in the social psychology of small groups. Particular attention will be given to group formation, the nature of small group processes, and the influence of groups on behavior.

PSY 3053. Cross-Cultural Psychology. (3-0) 3 Credit Hours.

Prerequisites: ANT 1013, ANT 2053, or PSY 1013; and PSY 3403 or the equivalent; or consent of instructor. An examination of the role of culture in the development and validation of psychological theories. Critical discussion of the application of theories of human behavior developed in the United States and Western Europe to other cultural groups, including ethnic minority subgroups. Topics may include identity formation, cognitive and personality development, social and organizational behavior, intergroup relations, psychological assessment, and mental health.

PSY 3103. Cognition. (3-0) 3 Credit Hours.

Prerequisites: PSY 2543 or PSY 2573; and PSY 3403. Examination of current information-processing models of human cognition. Emphasis will be placed on the processes by which stimuli are identified, by which past information is retrieved and used, and by which one's knowledge is modified.

PSY 3113. Motivation and Emotion. (3-0) 3 Credit Hours.

Prerequisite: PSY 3403 or the equivalent. Topics may include examination of biological, physiological, learning, psychodynamic, cognitive, and purposive factors in the motivation of human behavior. Includes an examination of the nature and roles of emotion in explaining motivational processes.

PSY 3123. Attitudes. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533 or PSY 2543; and PSY 3403. Examination of current theory and research on the nature of attitudes, their acquisition, and processes of attitude change. Topics may include psychological foundations of attitudes, structure and function of attitudes, attitude measurement, attitude-behavior consistency, theories of attitude change, and the role of attitudes in social behavior.

PSY 3153. Sensation and Perception. (3-0) 3 Credit Hours.

Prerequisites: PSY 2543 or PSY 2573, and PSY 3403. Survey of the processes by which the information available in the physical world is encoded and transformed to produce our perception of the world. Emphasis on the interaction between data-driven and conceptually-driven processes. Topics may include elementary sensory physiology, pattern recognition, illusions, physiological bases of perceptual dysfunction, and perceptual development. (Formerly PSY 2553. Credit cannot be earned for both PSY 3153 and PSY 2553.)

PSY 3203. Industrial and Organizational Psychology. (3-0) 3 Credit Hours.

Prerequisites: PSY 2073 or the equivalent, and PSY 3403 or the equivalent, or consent of instructor. The role of psychology in industry. Applications of psychological knowledge to industrial problems such as personnel selection, employee motivation and satisfaction, and the influence of organizations on behavior.

PSY 3303. Psychological Perspectives on Gender. (3-0) 3 Credit Hours.

Prerequisites: PSY 2503, PSY 2513, PSY 2523, or PSY 2533; and PSY 3403 or the equivalent; or consent of instructor. Consideration of physiological and social-learning origins of sex differences and psychological theories of sex-stereotyped and sexual behavior. Topics may include androgyny versus sex-typed behavior, gender dysfunction, origins of sex stereotypes, sexual preferences, and sex differences in reasoning ability, aggression, sexual behavior, personality, and psychopathology.

PSY 3403. Experimental Psychology. (3-0) 3 Credit Hours.

Prerequisites: One course from PSY 2503, PSY 2513, PSY 2523, or PSY 2533; PSY 2543 or PSY 2573; a minimum grade of "C-" in PSY 2073 or consent of instructor; and concurrent enrollment in PSY 3413. This course is designed to offer students the opportunity to familiarize themselves with representative experimental designs employed in psychological research, to provide instruction in the choice of appropriate designs, to provide the opportunity to develop skills in the analysis of published research, and to offer an introduction to techniques for collecting and analyzing data.

PSY 3413. Experimental Psychology Laboratory. (2-2) 3 Credit Hours.

Prerequisite: Concurrent enrollment in PSY 3403. Application of observational and experimental procedures to selected problems in the collection of psychological data and the evaluation of psychological theories.

PSY 3513. Developmental Psychopathology. (3-0) 3 Credit Hours.

Prerequisites: PSY 2513 and PSY 3403; or consent of instructor. Clinical findings and experimental research regarding childhood behavior problems, including hyperactivity, autism, schizophrenia, and anxiety disorders. Additional topics may include family influences on development of abnormal behavior and various psychotherapeutic techniques. (Formerly titled "Psychopathology and Childhood.")

PSY 3523. Psychology of Adulthood and Aging. (3-0) 3 Credit Hours.

Prerequisites: PSY 2503 and PSY 3403; or consent of instructor.

Descriptive and theoretical accounts of psychological developments from early adulthood to old age. Relevant data are reviewed in the areas of memory, intellect, mental and physical health, social development, personality, grief, and dying.

PSY 3543. Introduction to Clinical Psychology. (3-0) 3 Credit Hours.

Prerequisites: PSY 2513 and PSY 3403; or consent of instructor. An introduction to the scientist-practitioner viewpoint of clinical psychology. The basic tools of psychological assessment, psychodiagnosis, and psychotherapy will be addressed.

PSY 4003. History of Psychology. (3-0) 3 Credit Hours.

Prerequisite: PSY 3403 or consent of instructor. The development of major theoretical positions and research strategies in psychology from the ancient Greeks to the present, with emphasis on the development of scientific psychology since the late 19th century.

PSY 4013. Social Psychology of the Self. (3-0) 3 Credit Hours.

Prerequisites: PSY 2523 or PSY 2533; and PSY 3403; or consent of instructor. A social psychological examination of current research on the self in social interaction. Topics may include the structure of the self-concept and strategies for the preservation of self-esteem; the evaluation of the self through social comparison; the search for meaning and processes involved in understanding the self; and individual differences in self-knowledge and self-presentational styles. (Formerly PSY 3143. Credit cannot be earned for both PSY 4013 and PSY 3143.)

PSY 4103. Social Psychology of Prejudice. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533 and PSY 3403. Consideration of social, psychological, and personality factors in prejudice and stereotyping, and their interaction with cultural factors in producing racism and other prejudices.

PSY 4113. Cognitive Development. (3-0) 3 Credit Hours.

Prerequisites: PSY 2503 or PSY 2573; and PSY 3403; or consent of instructor. The development of perception, memory, and thinking in children, with attention to the roles of experience and maturation in development of thought, and the validity of the concept of cognitive stages, particularly Piagetian models.

PSY 4133. Social and Personality Development. (3-0) 3 Credit Hours.

Prerequisites: PSY 2503, PSY 2523, or PSY 2533; and PSY 3403 or the equivalent; or consent of instructor. Social and personality development across the life span. Topics may include sex-role development, child rearing, achievement, and the influence of peers. Socialization into different social roles may also be considered.

PSY 4143. Memory. (3-0) 3 Credit Hours.

Prerequisites: PSY 2543 or PSY 2573; and PSY 3403 or the equivalent; or consent of instructor. Models for the coding, storage, and retrieval of information in memory. Organization and structure of short-term, long-term, and semantic memory, and the role of verbalization and images in memory.

PSY 4183. Physiological Psychology. (3-0) 3 Credit Hours.

Prerequisite: PSY 3403 or consent of instructor. Topics may include the biological and particularly neurophysiological bases of human behavior and cognition, the structure and organization of the nervous system, and the effect of the latter on perception, memory, learning, motivation, and emotion.

PSY 4193. Relationships. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533 or PSY 2543; and PSY 2073. A consideration of the psychological processes that underlie the development and maintenance of social relationships. Emphasis on motivational and cognitive factors that mediate social interaction and communication. Special attention may be given to friendships, romantic relationships, successful marriages, and distressed relationships.

PSY 4213. Social Cognition. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533 or PSY 2573; and PSY 3403 or the equivalent; or consent of instructor. The study of how people perceive and construe social events, social situations, and the behavior of other people. Some emphasis is also placed on how social and cultural forces affect personal perception processes.

PSY 4253. Psychology of Health. (3-0) 3 Credit Hours.

Prerequisite: PSY 3403 or consent of instructor. An examination of the interaction of psychological, social, and biological factors in physical illness. The symptoms/conditions covered may include stress, pain, diabetes, cardiovascular disease, HIV/AIDS, and obesity. The course is research-based but also likely to include prevention and/or treatment strategies for health promotion.

PSY 4323. Psychology of Language. (3-0) 3 Credit Hours.

Prerequisites: PSY 2543 or PSY 2573, and PSY 3403. Investigates how humans represent, produce, understand, and acquire language. Topics may include language processing, neurolinguistics, language acquisition, conversational interaction, language disorders, and reading development. (Formerly PSY 2583. Credit cannot be earned for both PSY 4323 and PSY 2583.)

PSY 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. No more than 3 semester credit hours of independent study will apply to Psychology major or minor requirements.

PSY 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. No more than 3 semester credit hours of independent study will apply to Psychology major or minor requirements.

PSY 4923. Current Topics in Psychology. (3-0) 3 Credit Hours.

Prerequisites: PSY 1013 and PSY 3403. Coverage of topics of current interest in the field of psychology. May be repeated once for credit when topics vary, but not more than 3 semester credit hours will apply to the major in Psychology.

PSY 4933. Internship in Psychology. (0-0) 3 Credit Hours.

Prerequisite: Consent of internship coordinator before registration. Supervised experience relevant to psychology within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in Psychology. Not more than 3 semester credit hours will apply to Psychology major or minor requirements. Must be taken on a credit/no-credit basis.

PSY 4936. Internship in Psychology. (0-0) 6 Credit Hours.

Prerequisite: Consent of internship coordinator before registration. Supervised experience relevant to psychology within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in Psychology. Not more than 3 semester credit hours will apply to Psychology major or minor requirements. Must be taken on a credit/no-credit basis.

PSY 4953. Special Studies in Psychology. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

PSY 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: Enrollment limited to candidates for Honors in Psychology. Requirements for candidacy include the sponsorship of a faculty member and Psychology faculty approval of the student's project proposal. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval. Not more than 3 semester credit hours will apply to Psychology major requirements.

Public Administration (PAD)

Public Administration (PAD) Courses

PAD 1113. Public Administration in American Society. (3-0) 3 Credit Hours.

This functions as the general introductory course in public administration. The management of government bureaucracies including organization, human resources, career systems, and financing is discussed. There is a discussion of the role of bureaucracies in modern society in the formulation and implementation of public policy. May be applied toward the Core Curriculum requirement in the Component Area Option.

PAD 2153. Analysis and Assessment for Public Administration. (3-0) 3 Credit Hours.

Prerequisite: Any 3-semester-credit-hour Mathematics core course. This course will introduce students to the nature and practice of evaluation in the public and nonprofit sectors, and to the basic skills necessary to understand and conduct such evaluations. This course covers collecting, organizing, analyzing, and presenting information. (Formerly titled "Methodological Tools in Public Administration.")

PAD 3013. Introduction to Public Policy. (3-3) 3 Credit Hours.

The course introduces students to the different aspects of public policy in the U.S. political context. Topics may include agenda setting, policy formulation, implementation, analysis, and evaluation.

PAD 3023. Introduction to Urban Management and Policy. (3-0) 3 Credit Hours.

This course will introduce students to the basic concepts of the management of urban municipalities. Topics to be covered may include leadership in urban settings; organizational structure and change; delivery of urban services, particularly in a diverse urban environment; and policy issues in urban settings.

PAD 3033. Introduction to Nonprofit Agencies. (3-0) 3 Credit Hours.

This survey course introduces the nonprofit sector and core competencies required by nonprofit leaders. The role of nonprofit organizations in civil society frames the course, in particular, how the nonprofit sector is different from the public and private sectors. The state of the sector, and fundamental principles and practices required by nonprofit managers are explored, including creating a nonprofit, basics of fundraising, marketing, volunteer management, program development, and evaluation. Group and individual projects, service learning, research conducted for specific nonprofit agencies, oral presentations, networking, and construction of a portfolio of nonprofit work experiences and deliverables may be utilized. (Same as NPO 3013. Credit cannot be earned for both PAD 3033 and NPO 3013.)

PAD 3043. Public and Nonprofit Financial Management. (3-0) 3 Credit Hours.

This course introduces students to the principles of financial management for public and nonprofit organizations. The public financial management component of the course will cover issues at the federal, state, and local levels of government. Topics will include budgeting, financial reporting, revenue streams, tax equity, stakeholder relations, and accountability.

PAD 3053. Urban Economic Development. (3-0) 3 Credit Hours.

This course examines the factors contributing to the economic growth or decline of U.S. cities or regions and the role of local government in shaping economic development policies and economic change. It reviews the impact of public sector incentives and the outcomes of public-private partnerships through case studies of a variety of urban areas.

PAD 3113. Managing Public and Nonprofit Organizations. (3-0) 3 Credit Hours.

This course focuses on understanding the nature and role of public and nonprofit organizations. The course explores strategies for preserving and maximizing the public value of public and nonprofit organizations through the analysis of ethics, human behavior and motivation, organizational diagnosis, and management decision making. The structure, processes, environments, and purpose of the public and nonprofit sectors, and how to maximize organizational performance, are emphasized.

PAD 3123. Strategic Planning in the Public and Nonprofit Sectors. (3-0) 3 Credit Hours.

This course introduces the basic concepts of strategic planning and management in public and nonprofit organizations. The course covers a variety of topics such as formulation of mission and vision statements, identification of organizational goals, analysis of external environment and organizational context, strategic issue analysis, strategy development, implementation, and control. Students learn some analytical tools such as SWOT. Case studies are utilized to help students develop critical skills in analyzing and solving strategic problems.

PAD 3133. Politics and Policies of San Antonio and South Texas. (3-0) 3 Credit Hours.

The San Antonio area has been shaped and built by an array of decisions, public and private. This course will examine the history and development of the area and the political, social, and economic forces that have defined the local policymaking process by city, county, and special purpose governments. Topics may include fiscal policy, public investment policies, urban revitalization, and transportation.

PAD 3143. Urban and Regional Planning. (3-0) 3 Credit Hours.

This course will explore the fundamental concepts of urban and regional planning, including various planning tools and social and political issues related to planning. A wide variety of topics will be covered, including physical planning, transportation, housing, land use, urban redevelopment, and historic preservation. The course will tackle planning both as a community process and a professional activity. The evolution of planning concepts within the framework of the American political structure will be addressed.

PAD 3153. Legal Context of Public Policy and Administration. (3-0) 3 Credit Hours.

This course covers the legal framework for creating and implementing public policy, at all governmental levels. It includes an overview of the authority of legislative bodies to formulate laws and policies, as well as the rules that govern the implementation of these laws and policies by administrative bodies. The course will also cover the authority of courts to review and/or overturn laws and policies.

PAD 4843. Study Abroad: International Public Administration. (3-0) 3 Credit Hours.

Prerequisite: Permission of instructor. A lecture/seminar course associated with a study abroad program related to the study and practice of comparative governance. Involves international travel and field trips. May be repeated for credit when the destination country varies.

PAD 4853. Contemporary Issues in Public Administration (Senior Seminar). (3-0) 3 Credit Hours.

Prerequisite: To be taken in the semester of graduation or with consent of instructor. This is the capstone course for the Bachelor of Public Administration degree and will involve a major writing assignment and/or presentation. Specific topics to be covered will vary by semester.

PAD 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Prior approval required. Independent Study Course Form (available in the department or college advising center) signed by the instructor, the student's undergraduate advisor, Department Chair, and Dean of the College of Public Policy. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated once for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

PAD 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Prior approval required. Independent Study Course Form (available in the department or college advising center) signed by the instructor, the student's undergraduate advisor, Department Chair, and Dean of the College of Public Policy. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated once for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

PAD 4933. Internship in Public Administration. (0-0) 3 Credit Hours.

Prerequisites: PAD 1113, PAD 2153, and either PAD 3023 or PAD 3033; Prior approval of Public Administration Internship Coordinator is required. Supervised experience in an administrative setting that provides the opportunity to integrate theory and practice in public or nonprofit-related agencies. May be repeated for credit in a subsequent semester when agency setting varies, but not more than 6 semester credit hours will apply to a bachelor's degree.

PAD 4936. Internship in Public Administration. (0-0) 6 Credit Hours.

Prerequisites: PAD 1113, PAD 2153, and either PAD 3023 or PAD 3033; Prior approval of Public Administration Internship Coordinator is required. Supervised experience in an administrative setting that provides the opportunity to integrate theory and practice in public or nonprofit-related agencies. May be repeated for credit in a subsequent semester when agency setting varies, but not more than 6 semester credit hours will apply to a bachelor's degree.

PAD 4953. Special Topics in Nonprofit Organizations. (3-0) 3 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of regular course offerings. Special Topics may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

PAD 4963. Special Topics in Public Administration. (3-0) 3 Credit Hours.

An organized course offering the opportunity for specialized study not normally or not often available as part of regular course offerings. Special Topics may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. (Formerly titled "Special Topics in Urban Management Policy.")

PAD 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: Enrollment limited to candidates for Honors in Public Administration during the last two semesters; completion of honors examination and approval by the honors program coordinator. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Public Health (PUB)

Public Health (PUB) Courses

PUB 1113. Introduction to Public Health. (3-0) 3 Credit Hours.

Introduces students to the discipline of public health. It will cover a variety of disciplines to the basic tenets of public health. The course will provide a history of public health, an introduction to the five core disciplines (Epidemiology, Biostatistics, Environmental Health, Social and Behavioral Health, and Health Policy & Management). The course will also cover the role of public health in a global society. (Same as SOC 1043. Credit cannot be earned for both PUB 1113 and SOC 1043.)

PUB 2113. Data Management in Public Health. (3-0) 3 Credit Hours.

Study of the skills required to design, organize and implement a data management system in public health applications. It will cover an introduction to data preparation for statistical analysis, development of organizational tools, methods of data acquisition, data collection form design, principles of database development, quality control of data, and data security. Application of Microsoft® Access and SAS® software packages in data management will be presented. (Same as SOC 3543. Credit cannot be earned for both PUB 2113 and SOC 3543.)

PUB 3413. Behavioral Epidemiology. (3-0) 3 Credit Hours.

Provides the student with basic knowledge about epidemiological applications in a behavioral area. It covers behavioral and social environmental issues related to disease etiology, premature morbidity and mortality patterns. Provides an overview of the epidemiology of specific health-related behaviors, the relationships between these behaviors and health outcomes, and available evidence for the effectiveness and appropriateness of various approaches to modification of these behaviors. (Same as SOC 4083. Credit cannot be earned for both PUB 3413 and SOC 4083.)

PUB 3613. Etiology 1: Epidemiologic Methods to Investigate Outbreaks and New Epidemics. (3-0) 3 Credit Hours.

Utilizes case discussion seminars to appraise the investigative methods and research designs for studying disease outbreaks and new epidemics. Historical and current cases will include examples of disease outbreaks (e.g., food borne illness, hospital infections), emergence of new diseases, or epidemics related to specific exposures (e.g., natural disasters). Each case will evaluate the background of the problem, the investigative methods employed, the results, and the interventions taken to resolve the problem.

PUB 4613. Etiology 2: Epidemiologic Methods to Investigate Chronic Disease, Exposure, and Risk. (3-0) 3 Credit Hours.

Utilizes case discussion seminars to appraise the investigative methods and research designs for studying chronic disease, disease exposure, and ascertainment of risk. Cases will include current examples of chronic diseases or conditions affecting population health (e.g., cardiovascular disease, diabetes, and obesity), methods for ascertaining outcomes (e.g., death certificates), and measures of risk association (e.g., standardized mortality ratios and relative risk). Each case will evaluate the background of the problem, the investigative methods employed, the results, and the public policy and practice implications from the research.

PUB 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

PUB 4933. Public Health Internship. (0-0) 3 Credit Hours.

Prerequisites: Senior standing and completed coursework requirements in Public Health Foundation. Provides the opportunity for work experience in a private or public health-related agency. Opportunities are developed in consultation with faculty advisor and on-site coordinator. Internship must be approved in advance by the Internship Coordinator and the student's internship faculty advisor. Supervised full-or part-time off-campus work experience and training in health care management. A minimum of 150 hours of work experience is required. Individual conferences and written reports required. May be repeated for credit but not more than 6 hours of internship will apply to a bachelor's degree.

PUB 4953. Special Studies in Public Health. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Organized course offering the opportunity for specialized study in an area of health not available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Reading (RDG)

Reading (RDG) Courses

RDG 3513. Children's Literature—EC–6. (3-0) 3 Credit Hours.

Designed to familiarize students with children's books from diverse cultures that are appropriate for EC–grade 6. Topics will include: the contributions of children's books, criteria for selecting materials, the evaluation of individual books, a survey of the genres of children's literature, literary response, and the discussion of current issues in the field of children's literature. Restricted course; advisor code required for registration.

RDG 3523. Reading for Teachers—Grades 4–8. (3-0) 3 Credit Hours.

An overview of the development of reading across the grades with an emphasis on grades 4 through 8. This course focuses on the reading process, techniques for developing oral and written language facility, word identification and comprehension of readers from various sociocultural backgrounds and with differing abilities, and classroom assessment of reading. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required.

RDG 3533. Reading and Writing Across the Disciplines—Grades 4–8. (3-0) 3 Credit Hours.

Prerequisite: RDG 3523. Concurrent enrollment in C&I 4543, C&I 4553, and EDP 4203 in semester prior to student teaching for Grades 4–8 LA/RDG/SS certification. Must be admitted to the Teacher Certification Program. Study of the teaching and learning of content area reading in grades 4 through 8 including the textual, contextual, and cultural factors that influence reading. The course considers the range of reading abilities of intermediate and middle grade students, texts used in these grade levels, and strategies for teaching and evaluating vocabulary, comprehension, and thinking skills in the content areas. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly titled "Content Area Reading-Grades 4–8.")

RDG 3633. Literature and Other Texts Across the Content Areas—Grades 4–8. (3-0) 3 Credit Hours.

This course is designed to familiarize students with literature and other texts appropriate for students in grades 4 through 8. These texts include trade books, informational books, electronic texts, and other real-world texts that are appropriate for teaching and learning. Topics will include: examination of critical issues in children's books and young adult literature, evaluation and selection of texts, and literary response. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required.

RDG 3673. Reading for Secondary Teachers—Grades 8–12. (3-0) 3 Credit Hours.

An overview of the developmental nature of reading across the grades with an emphasis on grades 8 through 12. This course focuses on the reading process, including word identification, fluency, vocabulary, higher-order levels of comprehension, and metacognition. This course considers social and cultural factors that influence the adolescent reading processes, including the role of social interaction in reading, language variations, and background knowledge that are a part of the reading process. Other topics include differences in student ability and motivation as well as new approaches to assessment. This course also explores literacy programs that fit the needs of diverse adolescents, especially programs that address the challenges of struggling secondary readers. This course must be completed with a grade of "C-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required.

RDG 3773. Reading and Writing Across the Disciplines—Secondary. (3-0) 3 Credit Hours.

Prerequisites: Completion of all requirements for admission to the Teacher Certification Program, including but not limited to satisfying the TSI requirement, and completing EDP 3203 and EDU 2103. Study of the reading process and of materials and techniques for supporting reading and writing in the secondary school. Considers the range of reading ability of secondary students, texts used, and strategies for teaching vocabulary, and comprehension in different content areas. Directed field experiences in secondary school classrooms are required. Opportunities for cross-disciplinary applications. Restricted course; advisor code required for registration. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly titled "Introduction to Content Area Reading—Secondary.")

RDG 3803. Writing Development and Processes. (3-0) 3 Credit Hours.

Examines the nature of written language and facets of the writing process. The course focuses on the developmental nature of writing, stages in the writing process, writing in different genres, writing in the content areas, writing to learn, writing in relation to other communication processes, the evaluation of writing, and the place of technology in writing. For EC–6 generalists, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6 and C&I 4626 Student Teaching: Grades 4–8. Restricted course; advisor code required for registration.

RDG 3823. Reading Comprehension—EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4353, C&I 4403, and ECE 4203 is required. May not be taken concurrently with C&I 4303, ECE 4143, and RDG 4833. Study of the reading comprehension process, including how textual, reader, psychological, contextual, and cultural factors affect understanding of text. Emphasis is placed on cognitive reading strategies for comprehending narrative and expository text. Emphasis is also placed on strategies for teaching and evaluating vocabulary, comprehension, and thinking skill in the content areas. This course must be completed with a grade of "B-" or better for students to enroll in Block C courses. For EC–6 generalists, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. (Credit cannot be earned for both RDG 3823 and BBL 3823.)

RDG 4833. Organizing Reading Programs for Differentiated Instruction—EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4353, C&I 4403, and ECE 4203 is required. May not be taken concurrently with C&I 4303, ECE 4143, and RDG 4833. Study of the reading comprehension process, including how textual, reader, psychological, contextual, and cultural factors affect understanding of text. Emphasis is placed on cognitive reading strategies for comprehending narrative and expository text. Emphasis is also placed on strategies for teaching and evaluating vocabulary, comprehension, and thinking skill in the content areas. This course must be completed with a grade of "B-" or better for students to enroll in Block C courses. For EC–6 generalists, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required.

RDG 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

Real Estate (RFD)

Real Estate (RFD) Courses

RFD 3523. Real Estate Law. (3-0) 3 Credit Hours.

Prerequisite: BLW 3013 or the equivalent. Legal environment of real property ownership and transfer and legal brokerage; estates in land; sales contracts; mortgage transactions; title conveyances; landlord and tenant; restrictions and zoning; eminent domain; federal, state, and local laws governing housing discrimination; and equal opportunity and community reinvestment. (Same as BLW 3523. Credit cannot be earned for both RFD 3523 and BLW 3523.)

RFD 3533. Principles of Construction for Real Estate Professionals. (3-0) 3 Credit Hours.

The principles of construction methods and management with application to sustainable real estate development and adaptive reuse, facility and property management, real estate brokerage and real estate lending. Topics include building code requirements, AIA forms, assembling and interpreting construction documents, construction materials and methods, LEED construction requirements, tenant improvements, construction cost estimating and project cost tracking, and construction project management.

RFD 3571. Real Estate Seminar. (1-0) 1 Credit Hour.

Prerequisites: Enrollment as real estate major or minor and consent of instructor, and approval of the Department Chair and the Dean of the College. Weekly presentations of current topics in real estate. This seminar may be repeated one time for a total of two semester credit hours.

RFD 4733. Principles of Sustainable Real Estate Development. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3014, FIN 3433, and FIN 4713 or FIN 4723, or consent of instructor, and approval of the Department chair and the Dean of the College. The examination of the principles involved in creating value through the real estate development process. Economic, regulatory, planning, sustainability, financing, management and disposition issues are considered in the marketing and financial analyses of development prospects. (Same as FIN 4733. Credit cannot be earned for both RFD 4733 and FIN 4733. Real Estate Finance and Development majors cannot take FIN 4733 to meet degree requirements.)

RFD 4763. Real Estate Marketing. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013. Focuses on the processes involved in professionally marketing and selling real estate. Emphasis is on integrating the four elements of a marketing mix—promotion, place, product, and price—and showing how they are used within the real estate industry to create marketing strategies. (Same as MKT 4763. Credit cannot be earned for both RFD 4763 and MKT 4763. Real Estate Finance and Development majors cannot take MKT 4763 to meet degree requirements.)

RFD 4853. Real Estate Appraisal. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3014, and FIN 3433, their equivalents, or consent of instructor, and approval of the Department Chair and the Dean of the College. Functions and methods of property valuation, including comparable sales analysis, cost depreciation analysis, and income capitalization; residential and income property appraisal techniques and reporting. (Same as FIN 4853. Credit cannot be earned for both RFD 4853 and FIN 4853. Real Estate Finance and Development majors cannot take FIN 4853 to meet degree requirements.)

RFD 4903. Internship in Construction Management. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003; completion of 9 semester credit hours consisting of any combination; FIN 3014, and/or courses with a CSM or RFD prefix. May only be taken by students in the B.B.A. degree in Real Estate Finance and Development with a Minor in Construction Management; with a 2.0 grade point average at the University, College, and REFD program level, and with permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms. This internship, as a required course in the Construction Management minor, is limited to the business and financial aspects of construction and will allow students to gain valuable experience in the field. The internship facilitates an integrative experience through interaction with entrepreneurs and building development business owners. Students engage in research projects, examine relevant issues and problems that builders and developers confront, and have the opportunity to engage in managerial work experience. Internship may not be repeated. (Formerly FIN 4903. Credit cannot be earned for both RFD 4903 and FIN 4903.)

RFD 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: A 3.0 grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

RFD 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: A 3.0 grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

RFD 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor for required forms. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

RFD 4923. Internship in Real Estate. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, declared major in Real Estate Finance and Development with 9 semester credit hours of real estate or finance courses, a 2.5 UTSA grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor for required forms. The internship provides students the opportunity for professional work experience in a real estate related enterprise in either a private business or a public agency. The scope of the internship is developed in consultation with the sponsoring organization, the faculty advisor and Department Chair. This internship may be repeated once (for a total of 6 semester credit hours) provided the internships are with different organizations. (Formerly FIN 4923.)

RFD 4951. Special Studies in Real Estate. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 and consent of instructor, approval of the Department Chair and the Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

RFD 4952. Special Studies in Real Estate. (2-0) 2 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, approval of the Department Chair and the Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

RFD 4953. Special Studies in Real Estate. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, approval of the Department Chair and the Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Russian (RUS)

Russian (RUS) Courses

RUS 1014. Elementary Russian I. (3-2) 4 Credit Hours. (TCCN = RUSS 1411)

Fundamentals of Russian offering the opportunity to develop speaking, listening, reading, and writing skills. Introduction to Russian culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

RUS 1024. Elementary Russian II. (3-2) 4 Credit Hours. (TCCN = RUSS 1412)

Prerequisite: RUS 1014, the equivalent, an appropriate placement test score, or consent of instructor. Fundamentals of Russian offering the opportunity to further develop speaking, listening, reading, and writing skills. Further exposure to Russian culture.

RUS 2013. Intermediate Russian I. (3-1) 3 Credit Hours. (TCCN = RUSS 2311)

Prerequisite: RUS 1024, the equivalent, an appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, speaking, reading, and writing skills. Continued exposure to Russian culture.

RUS 2023. Intermediate Russian II. (3-1) 3 Credit Hours. (TCCN = RUSS 2312)

Prerequisite: RUS 2013, the equivalent, an appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, speaking, reading, and writing skills. Continued exposure to Russian culture.

RUS 2333. Russian Literature in English Translation. (3-0) 3 Credit Hours. (TCCN = ENGL 2331)

Major works of Russian literature across time, genres, and movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly RUS 3333. Credit cannot be earned for both RUS 2333 and RUS 3333.)

RUS 3033. Oral Communication Skills. (3-0) 3 Credit Hours.

Prerequisite: RUS 2013 or the equivalent. Further development of speaking skills in a variety of contexts. May be repeated once for credit when topics vary.

RUS 3143. Structure of Russian Language. (3-0) 3 Credit Hours.

Prerequisite: RUS 2013 or the equivalent. Extensive grammar review. Further development of speaking and writing skills through activities directed at the intermediate-high and advanced levels. Considerations of differences between written and spoken language. May be repeated once for credit when topics vary.

RUS 3213. Advanced Russian. (3-0) 3 Credit Hours.

Prerequisite: RUS 2023 or the equivalent. Opportunity to develop advanced-level oral and written communication skills in the Russian language, along with enhanced comprehension skills in listening and reading. May be repeated for credit when topics vary.

RUS 3633. Topics in Russian Culture. (3-0) 3 Credit Hours.

Prerequisite: RUS 2013 or the equivalent. Further development of proficiency by content-based instruction. Topics may include geography, traditions, history, music, literature, art, or film. May be repeated for credit when topics vary.

Sociology (SOC)

Sociology (SOC) Courses

SOC 1013. Introduction to Sociology. (3-0) 3 Credit Hours. (TCCN = SOCI 1301)

Introduces the study of human groups, the relations of individuals to groups, and the process of becoming a group member and functioning in a group setting. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. (Formerly titled "Introduction to the Study of Society.")

SOC 1043. Introduction to Public Health. (3-0) 3 Credit Hours.

Introduces the discipline of public health. Covers a variety of disciplines to the basic tenets of public health. Provides a history of public health, an introduction to the five core disciplines (Epidemiology, Biostatistics, Environmental Health, Social and Behavioral Health, and Health Policy & Management). Also covers the role of public health in global society. (Same as PUB 1113. Credit cannot be earned for both SOC 1043 and PUB 1113.)

SOC 2013. Social Problems. (3-0) 3 Credit Hours. (TCCN = SOCI 1306)

Examines major contemporary social problems and their causes and consequences. Topics may include poverty, racism, sexism, deviance and crime, drug and alcohol dependence, the urban crisis, overpopulation, and war. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences.

SOC 2023. Social Context of Drug Use. (3-0) 3 Credit Hours. (TCCN = SOCI 2340)

Explores the use and abuse of mind-altering substances within society. Topics of study may include historical treatments of drug use, drug treatment and recovery interventions, the global magnitude of contemporary drug problems, and the problematic nature and consequences of drug legislation and enforcement. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. (Formerly titled "Drugs in Society.")

SOC 2063. Special Topics in Sociology. (3-0) 3 Credit Hours.

An organized course offering the opportunity for a specialized topic at the lower division level that is available through the regular course offerings. Special Topics may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

SOC 3013. Social Stratification. (3-0) 3 Credit Hours.

Examines theory and research pertaining to inequalities of power, prestige, and economic privilege. Major emphasis upon inequality and social mobility in the United States.

SOC 3043. Race and Ethnic Relations. (3-0) 3 Credit Hours.

Examines the dominant-subordinate relations in world societies, with major emphasis on the United States. Models of assimilation, colonial and class society, and consequences for minority and majority populations may be examined.

SOC 3053. Deviance and Difference. (3-0) 3 Credit Hours.

Analyzes the forms of deviance and consideration of social/political trends toward difference. An examination of theories may include: biological, analytic, labeling, functionalist, culture conflict, radical, and poststructuralist.

SOC 3063. Collective Behavior. (3-0) 3 Credit Hours.

Prerequisite: SOC 1013, or consent of instructor. Focuses on case studies and associated theory dealing with various forms of collective behavior ranging from spontaneous events to organized mass movements.

SOC 3083. Social Change and Development. (3-0) 3 Credit Hours.

Presents principal models and theories of social transformation applied to examples of societal change. Topics may include consideration of master trends such as rationalization, industrialization, and bureaucratization, and the expansion and contraction of global interconnectedness.

SOC 3093. Religion and Society. (3-0) 3 Credit Hours.

Focuses on religious institutions and movements in the United States with comparative data from other countries. Topics may include the relationship of religious institutions to social stratification, economic institutions, and political and social change.

SOC 3113. Criminology. (3-0) 3 Credit Hours.

Examines the nature, prevalence, and impact of different types of legal violations, including street crime, organized crime, political crime, and white-collar crime. Includes treatment of social and legal responses to crime.

SOC 3163. Families in Society. (3-0) 3 Credit Hours.

Examines the modern family, structures and functions, variant patterns and the influence of the broader society in producing family change. Contemporary and continuing issues are covered in the context of theory and research. Topics may include variability in childhood socialization, family violence, changing gender roles, marriage, divorce and remarriage, alternative family structures, and the aging family. (Formerly SOC 2053. Credit cannot be earned for both SOC 3163 and SOC 2053.) (Formerly titled "Marriage and Family.")

SOC 3193. The Sociology of Work and Occupations. (3-0) 3 Credit Hours.

Prerequisite: SOC 1013, or consent of instructor. Explores occupational structures in selected societies; the relationship between occupations and economic rewards, lifestyles, and worldview; and determinants of work satisfaction.

SOC 3203. Gerontology. (3-0) 3 Credit Hours.

Examines the historical and cross-cultural differences in the status of the elderly in society. Includes interaction of the elderly with social institutions, and policy implications of the demographic shift toward an aging population in the United States.

SOC 3213. Medical Sociology. (3-0) 3 Credit Hours.

Examines social factors in the cause and distribution of disease; relationships between patients and medical professionals; the contribution of lay belief to health, illness, treatment, and recovery; the organization of health-care delivery; and the disparities in the distribution of medical resources.

SOC 3223. Population Dynamics and Demographic Techniques. (3-0) 3 Credit Hours.

Introduces the common methods, techniques, and models employed by demographers. Topics may include demographic data sources, introduction to life table techniques; construction, standardization, and decomposition of rates; measures of concentration and diversity; and population growth projections. Students will become familiar with microcomputer programs for demographic analysis. (Formerly titled "Demographic Techniques.")

SOC 3253. The Individual and Society. (3-0) 3 Credit Hours.

Examines the major theories dealing with the effects of culture and social structure on the development and functioning of the personality and the self.

SOC 3263. Latinas in U.S. Society. (3-0) 3 Credit Hours.

Focuses on women of Latino descent in the United States with a comparative emphasis on the experiences of Texas Latinas relative to those residing elsewhere in the Southwest. Topics may include: historical presence in the Southwest; patriarchy and familism; labor and employment issues; immigration and border issues; political involvement and feminist vision; artistic, cultural and intellectual expression. (Same as WS 3953. Credit cannot be earned for both SOC 3263 and WS 3953 when topic is the same.)

SOC 3283. Poverty. (3-0) 3 Credit Hours.

Examines the causes and consequences of poverty in the United States and selected other societies. An examination of social programs designed to combat poverty.

SOC 3293. Sociology of Gender. (3-0) 3 Credit Hours.

Explores the nature of gender roles in our own and other societies. Consideration of how people learn gender roles and the outcomes of this learning for individuals, families, and societies. Alternatives to conventional gender roles. (Formerly titled "Gender Roles.")

SOC 3323. Introduction to Social Research. (3-0) 3 Credit Hours.

Prerequisite: SOC 1013. Introduction to the philosophy of science and the logic of research design. Examines a variety of social research designs including experiments, survey research, content analysis, and historical analysis. Course emphasizes techniques related to information gathering, basic data analysis, and reporting findings. (Formerly titled "Research Methods in Sociology.")

SOC 3343. Classical Sociological Theory. (3-0) 3 Credit Hours.

Prerequisite: SOC 1013. Examines the transition from social philosophy to sociology, with special emphasis on the work of Karl Marx, Emile Durkheim and Max Weber. The foundational theories and concepts in sociology are addressed, with attention also given to the application of theory to longstanding and current social issues. (Formerly SOC 3153. Credit cannot be earned for both SOC 3343 and SOC 3153.)

SOC 3353. Contemporary Sociological Theory. (3-0) 3 Credit Hours.

Prerequisite: SOC 1013. Examines contemporary paradigms in sociological theory (e.g., functionalism, neo-Marxism, phenomenology, and feminism), and current debates over the state of theory. Attention is also given to the linkages between theory and research. (Formerly SOC 3183. Credit cannot be earned for both SOC 3353 and SOC 3183.)

SOC 3373. Qualitative Research Methods. (3-0) 3 Credit Hours.

Prerequisite: SOC 3323. Introduces the philosophy of science and research design, including participant observation, in-depth interviews, oral history, and focus groups through field research. The course provides opportunities for developing qualitative research skills while gaining familiarity with issues and problems common to these methods.

SOC 3393. Quantitative Research Methods. (3-0) 3 Credit Hours.

Prerequisites: Completion of the Core Curriculum requirement in mathematics, SOC 1013, and SOC 3323. Application of conceptualization and operationalization in the quantitative analysis of a variety of sociological subjects. Use of elementary measures of central tendency and dispersion, crosstabulations, and linear model procedures to evaluate relationships among variables; problems of descriptions and inference. Includes the use of standard computer packages and secondary analysis of data. (Formerly SOC 3313. Credit cannot be earned for both SOC 3313 and SOC 3393.)

SOC 3413. Sociology of the Mexican American Community. (3-0) 3 Credit Hours.

Focuses on contemporary issues regarding Mexican American communities. Topics of discussion include family structure, gender roles, border issues and political power. Comparison with other minorities and the majority group will allow discussion of variant community patterns. (Same as MAS 3413. Credit cannot be earned for both MAS 3413 and SOC 3413.) (Formerly titled "Mexican American Family.").

SOC 3423. Mass Media in Society. (3-0) 3 Credit Hours.

Examines media production and its role in the economy; the construction of media meaning, signification, and ideology; and the role of the audience in making sense of messages. Larger issues of societal power will be treated, along with an examination of alternative media.

SOC 3433. Mexican Immigration and U.S. Society. (3-0) 3 Credit Hours.

Focuses on the growth and development of the Mexican population in the United States and controversies around Mexican immigration, both legal and undocumented. Uses a sociological perspective to present a historical analysis of Mexican migration to the United States, theoretical explanations of migrations, and the social implications of these issues.

SOC 3463. Sociology of Sport and Leisure. (3-0) 3 Credit Hours.

Examines the social meanings of play and leisure in advanced industrial societies. Emphasis will be on the origins, structure, and function of these phenomena in the United States, with major emphasis on sport as an institution.

SOC 3503. Sociology of Education. (3-0) 3 Credit Hours.

Explores education as an institution that affects and is affected by the larger social structure. Topics may include the role of schools in society; connections between schooling, stratification and the economy; gender and ethnic differences in achievement; and social and cultural contexts of learning.

SOC 3513. Children and Society. (3-0) 3 Credit Hours.

Examines the evolution of concepts of childhood over time. Topics may include theories of child development, cultural and social influences in child raising, the effects of affluence and poverty on children, children in postmodern societies, and child socialization in different cultures.

SOC 3543. Data Management in Public Health. (3-0) 3 Credit Hours.

Provides an introduction to data management for research projects in public health using microcomputers. Topics include design of data collection forms, data entry, computer managed documentation and statistical computing using SPSS/SAS. (Same as PUB 2113. Credit cannot be earned for both SOC 3543 and PUB 2113.).

SOC 4023. Violence and Society. (3-0) 3 Credit Hours.

Examines and assesses the major social science perspectives and theories that attempt to explain why violence occurs in society. (Formerly SSC 3203. Credit cannot be earned both for SOC 4023 and SSC 3203.).

SOC 4043. Global Health. (3-0) 3 Credit Hours.

Covers the field of global health, particularly the serious health problems facing developing world populations. The course begins with an introduction to the global burden of disease and then examines the complex social, economic, political, environmental, and biological factors that structure the origins, consequences and possible treatments of disease. Provides an introductory survey of the basic issues and initiatives in contemporary international public health, and develops student awareness of the socioeconomic and cultural complexity of health problems in developing nations.

SOC 4053. Health Care System. (3-0) 3 Credit Hours.

Covers the complexities of health care organization and finance and presents a general overview of how the U.S. health care systems work and how the major components within the system fit together. Covers basic structures and operations of the U.S. health system—from its historical origins and resources, to its individual services, cost, and quality. Compares and contrasts the U.S. health care system with other health care systems around the world.

SOC 4073. Social and Behavioral Theories in Public Health. (3-0) 3 Credit Hours.

Examines the fundamental social and behavioral theories that drive research and practice in public health. The course covers a number of social and behavioral theories commonly used in public health education interventions at the individual, group, and community levels.

SOC 4083. Behavioral Epidemiology. (3-0) 3 Credit Hours.

Provides an introduction to the social/behavioral sciences in public health, basic behavioral measurement methods, and basic knowledge of epidemiologic application in the area of social and behavioral science. The course will stress the relationship of human behavior to disease, and ways in which the social/behavioral sciences differ from epidemiology with respect to approaches to measurement, terminology, and analytic methods. In addition, the course will examine the literature, and explore in-depth and quantify the determinants of behavior that are risk factors for several chronic and infectious disorders. (Same as PUB 3413. Credit cannot be earned for both SOC 4083 and PUB 3413.).

SOC 4433. Culture and Society. (3-0) 3 Credit Hours.

Explores the social significance of cultural production, including the relationships between art, consciousness, the economy, and history. Themes examined may include the social production of art, art and ideology, the problem of artistic reception, and art movements and cultural resistance. Topics include art and culture in minority social movements, the relation between high and low culture, and cultural conflict over art.

SOC 4683. Health Disparities. (3-0) 3 Credit Hours.

The main purpose of this course is to provide students with an understanding of how racial/ethnic, social, economic, demographic and gender factors contribute to disparities in health and health care in the United States.

SOC 4853. Special Studies in Sociology. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. (Formerly SOC 4953. Credit may be earned for both SOC 4853 and SOC 4953 but may not exceed 6 semester credit hours combined.).

SOC 4863. Topics in Sociology. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for a specialized topic not normally or not often available as part of the regular course offerings. Special Topics may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

SOC 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

SOC 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

SOC 4923. Public Health Study Abroad. (0-0) 3 Credit Hours.

The purpose of this course is to provide students greater understanding of global health issues. The study abroad program focuses on health care and public health in different international settings and provides students with a unique opportunity to integrate direct academic learning and field experience in public health. The program involves attending class room lectures in public health and interacting with local public health officials in understanding how health care system is responding to the health needs of its population. This course will satisfy 3 hours of the Public Health Internship requirement under the Sociology degree.

SOC 4933. Internship in Sociology. (0-0) 3 Credit Hours.

Prerequisites: Completion of SOC 3343 or SOC 3353 and SOC 3373 or SOC 3393 and consent of internship coordinator. Provided as part of the COLFA Signature Experience and offers supervised work experience relevant to sociology within selected organizations and agencies. Internships selected should be relevant to previous coursework. A maximum of 6 semester credit hours may be earned through this internship.

SOC 4936. Internship in Sociology. (0-0) 6 Credit Hours.

Prerequisites: Completion of SOC 3343 or SOC 3353 and SOC 3373 or SOC 3393 and consent of internship coordinator. Provided as part of the COLFA Signature Experience and offers supervised work experience relevant to sociology within selected organizations and agencies. Internships selected should be relevant to previous coursework. A maximum of 6 semester credit hours may be earned through this internship.

SOC 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: Enrollment limited to candidates for Honors in Sociology during the last two semesters. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Spanish (SPN)

Spanish (SPN) Courses

SPN 1014. Elementary Spanish I. (3-2) 4 Credit Hours. (TCCN = SPAN 1411)

Fundamentals of Spanish, offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Introduction to Hispanic culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture.

SPN 1024. Elementary Spanish II. (3-2) 4 Credit Hours. (TCCN = SPAN 1412)

Prerequisite: SPN 1014, the equivalent, or an appropriate placement test score. Fundamentals of Spanish offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Further study of Hispanic culture.

SPN 2013. Intermediate Spanish I. (3-1) 3 Credit Hours. (TCCN = SPAN 2311)

Prerequisite: SPN 1024, the equivalent, or an appropriate placement test score. Continued opportunity to develop listening, speaking, reading, and writing skills. Grammar and further study of Hispanic culture.

SPN 2023. Intermediate Spanish II. (3-1) 3 Credit Hours. (TCCN = SPAN 2312)

Prerequisite: SPN 2013, the equivalent, or an appropriate placement test score. Continued opportunity to develop listening, speaking, reading, and writing skills. Grammar review and further study of Hispanic culture.

SPN 2333. Hispanic Literature in English Translation. (3-0) 3 Credit Hours. (TCCN = ENGL 2331)

Prerequisite: WRC 1013 or the equivalent. Major works in Hispanic literatures: themes, genres, and movements. May not be applied to a major in Spanish. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly SPN 3333. Credit cannot be earned for both SPN 2333 and SPN 3333.)

SPN 2513. Spanish for Special Purposes. (3-1) 3 Credit Hours. (TCCN = SPAN 2316)

Prerequisite: SPN 2013, the equivalent, or an appropriate placement test score. Foreign language communication and cross-cultural skills relevant to one or more of the following areas: business, health care, law, education, science, southwest Spanish, Hispanic literature, or technology. May be repeated for credit when topics vary.

SPN 3003. Oral and Written Expression. (3-1) 3 Credit Hours.

Prerequisite: SPN 2023, the equivalent, or an appropriate placement test score. If placement is at a higher level, a Spanish elective may be substituted for the minor. Conversation, reading, and grammar review toward building literacy skills. Opportunities for composition and oral communication for a variety of situations and topics. May not be used as an elective for the Spanish major. (Formerly SPN 2103. Credit cannot be earned for both SPN 3003 and SPN 2103.)

SPN 3013. Spanish Phonetics and Phonology. (3-0) 3 Credit Hours.

Prerequisite: SPN 2023 or SPN 3003, the equivalent, or consent of instructor. Offers the opportunity for study of the sound system of Latin-American Spanish. Activities may include pronunciation exercises, exercises in sound discrimination and transcription, and articulatory description of various dialects of Spanish.

SPN 3033. Oral Communication Skills. (3-0) 3 Credit Hours.

Prerequisite: SPN 2023 or SPN 3003, the equivalent, or consent of instructor. Opportunity for development of speaking skills in a formal register through activities directed at vocabulary building, grammatical accuracy, and aural/written comprehension. May not be used as an elective for the Spanish major.

SPN 3043. Introduction to Literature. (3-0) 3 Credit Hours.

Prerequisite: SPN 3063, the equivalent, or consent of instructor. Approaches to reading, comprehension and analysis of literary and other advanced texts. Use of analytical terminology, advanced vocabulary building, and further development of formal writing skills. (Formerly titled "Advanced Reading.")

SPN 3063. Grammar and Composition. (3-0) 3 Credit Hours.

Prerequisite: SPN 2023 or SPN 3003, or the equivalent. Extensive review of fundamental grammar with vocabulary building. Development of writing skills and style through activities directed at the Advanced level on the ACTFL-ETS proficiency scale. Consideration of usage and differences between written and spoken language.

SPN 3113. Linguistic Structures of Spanish. (3-0) 3 Credit Hours.

Prerequisite: SPN 3063, the equivalent, or consent of instructor. Offers the opportunity for the application of the basic principles of analysis and description of language structure to Spanish. Attention given to structural regularities at the levels of word formation, syntax, and semantics of formal Spanish, recognizing variability in spoken registers.

SPN 3153. Spanish for the Business/Management Fields. (3-0) 3 Credit Hours.

Prerequisite: SPN 2023 or SPN 3003, or the equivalent. Foreign language skills relevant to careers in business fields. Emphasis on reading skills and simple conversations on business topics. Exposure to terminology from contracts, financial statements, business law, marketing, and banking. Intended for students with some background in Spanish. May be repeated once for credit when topics vary.

SPN 3413. The Literature of Spain from the Middle Ages to 1700. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043 or consent of instructor. Spanish literature from the Middle Ages to 1700. Readings of selections and complete works. Practice in critical analysis through papers and examinations.

SPN 3423. The Literature of Spain from 1700 to the Present. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043 or consent of instructor. Spanish literature from 1700 to the present. Readings of selections and complete works. Practice in critical analysis through papers and examinations.

SPN 3463. Latin American Literature to Modernism. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043 or consent of instructor. Latin American literature from pre-Columbian times to Modernism. Practice in critical analysis through papers and examinations.

SPN 3473. Latin American Literature since Modernism. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043 or consent of instructor. Latin American literature from Modernism to the present. Practice in critical analysis through papers and examinations.

SPN 3493. Mexican American Literature. (3-0) 3 Credit Hours.

Prerequisite: SPN 3003, SPN 3063, or consent of instructor. Readings and discussion of works by Mexican American writers. The expression through poetry, the novel, the short story, and the theater of the Mexican American cultural experience as well as universal themes and literary concerns. Selections from popular literature, including the oral tradition. May be repeated for credit when topics vary.

SPN 3613. Spanish Culture and Civilization. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043. Emergence of the Spanish peoples from pre-Roman times to the present: history, cultural expression, myths, values, and worldview.

SPN 3623. Latin American Culture and Civilization. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043. The cultural life of the respective geographic regions and social strata of Latin America from before the Conquest to the present, as reflected in and interpreted by its literature and arts.

SPN 4003. Advanced Language Skills. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043, or SPN 3063 as appropriate, or consent of instructor. Development of advanced skills in formal Spanish, including such areas as grammar, composition, oratory, creative writing, Spanish/English translation, and other practical applications of language study. May be repeated for credit when topics vary.

SPN 4113. Topics in Spanish Linguistics. (3-0) 3 Credit Hours.

Prerequisite: SPN 3113 or consent of instructor. Advanced study and applications of topics in Spanish linguistics. May include one or more of the following: phonology, morphology, syntax, semantics, dialectology, language variability, and history of Spanish. May be repeated for credit when topics vary. This course fulfills the College of Liberal and Fine Arts Signature Experience.

SPN 4123. The Spanish of the United States. (3-0) 3 Credit Hours.

Prerequisite: SPN 3013, SPN 3113, or consent of instructor. The analysis of the Spanish language as used by native or heritage speakers in the United States, from a linguistic, pragmatic and sociolinguistic perspective. Particular attention given to the Spanish spoken in Texas.

SPN 4203. Topics in Hispanic Literatures. (3-0) 3 Credit Hours.

Prerequisite: An upper-division course in literature taught in Spanish or consent of instructor. An intensive study of an area of Spanish or Spanish American literatures. May be repeated for credit when topics vary. This course fulfills the College of Liberal and Fine Arts Signature Experience.

SPN 4303. Topics in Hispanic Cultures. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043 or consent of instructor. An intensive study of an area of Hispanic cultures. May be repeated for credit when topics vary. This course fulfills the College of Liberal and Fine Arts Signature Experience.

SPN 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. No more than 6 semester credit hours of SPN 4913 and/or SPN 4993 may be applied to the major in Spanish.

SPN 4933. Internship in Spanish. (0-0) 3 Credit Hours.

Prerequisite: Permission of Department Chair. Supervised experience in a setting that provides the opportunity to integrate theory and practice in language usage. May be repeated once for credit.

SPN 4953. Special Studies in Spanish. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

SPN 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisite: Consent of the undergraduate advisor. Supervised research and preparation of an honors thesis. May be repeated once for credit, with approval. No more than 6 semester credit hours of SPN 4993 and/or SPN 4913 may be applied to the major in Spanish.

Special Education (SPE)

Special Education (SPE) Courses

SPE 3603. Introduction to Special Education. (3-0) 3 Credit Hours.

A study of individuals, groups, and populations with disabilities or exceptionalities. Content covered includes special education and disability law, critical issues in special education, special education processes and procedures, etiology, characteristics, prevalence, and placement options. Knowledge and competencies necessary for providing research-based, empirically derived best practices in curriculum and instruction to preschool and school-aged children and youth with exceptionalities in inclusive settings will also be presented. (Formerly ATE 3603, EDP 3603, and IDS 3303. Credit cannot be earned for more than one of the following: ATE 3603, EDP 3603, IDS 3303, or SPE 3603.) (Formerly titled "Introduction to Exceptionality.").

SPE 3623. Assessment of Students with Mild/Moderate Disabilities. (3-0) 3 Credit Hours.

Prerequisite: Admission to Teacher Certification Program, SPE 3603, SPE 3693, and ECE 3603. Concurrent enrollment in SPE 3653, SPE 4623, and SPE 4643 is required. An introduction to assessment of students with mild/moderate disabilities. Informal and formal assessment instruments, procedures, and systems for assessment of aptitude, achievement, adaptive behavior, and language abilities will be studied. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. (Formerly EDP 3623. Credit cannot be earned for both SPE 3623 and EDP 3623.) (Formerly titled "Assessment of Exceptional Children.").

SPE 3633. Classroom and Behavior Management for Students with Disabilities. (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3623, SPE 3653, SPE 3693, SPE 4623, SPE 4643, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 3673, SPE 3683, and SPE 4673 is required. A study of common behavior problems in children with disabilities, behavior management, and other research-supported strategies for addressing behavior issues in children with disabilities. Research related to alternative explanations for behavior and behavior change will be included. Planning, application, and evaluation of a behavior change project is required. (Formerly ATE 3633 and EDP 3633. Credit cannot be earned for more than one of the following: ATE 3633, EDP 3633, or SPE 3633.) (Formerly titled "Classroom and Behavior Management for Exceptional Children.").

SPE 3653. Practicum in Special Education (Introduction). (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, and ECE 3603. Concurrent enrollment in SPE 3623, SPE 4623, and SPE 4643 is required. Instructional practices for students with disabilities will be studied including instructional design and creation of individual education plans. Application of course content in the field with students with disabilities will be required. Students enrolled in this course will be required to spend 6–8 hours a week in field-based placements, for a total of 60 to 80 hours, dependent upon the field placement program needs and requirements and on instructor requirements. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. Restricted course; advisor code required for registration. (Formerly EDP 3653. Credit cannot be earned for both SPE 3653 and EDP 3653.)

SPE 3673. Assessment: Students with ASD and Developmental Disabilities. (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 3633, SPE 3683, and SPE 4673 is required. An introduction to formal and informal standardized assessment procedures for students with autism spectrum disorders and developmental disabilities. Course emphasis will be on the evaluation of instruction through assessment and using assessment for instructional design and programmatic planning for students with autism spectrum disorders and developmental disabilities. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12.

SPE 3683. Special Education Across the Lifespan. (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 3633, SPE 3673, and SPE 4673 is required. The study of programs and services in special education, including early childhood intervention and transition, that impact students with disabilities throughout the lifespan. The course will focus on supports, procedures, and resources for facilitating transitions and communication of transition activities involving the student and families.

SPE 3693. Special Education Law. (3-0) 3 Credit Hours.

A study of the local, federal and state laws, regulations, rules, and ethics that govern special education. Course topics will include due process, confidentiality, monitoring and evaluation requirements, and the provision of related services. Emphasis on terminology, definitions, classification systems, and current issues and trends.

SPE 4623. Mathematics Instruction for Students with Disabilities. (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, ECE 3603, MAT 1153, and MAT 1163. Concurrent enrollment in SPE 3623, SPE 3653, and SPE 4643 is required. The study of the learning and development of mathematical concepts, procedures, and skills for students with disabilities. Concepts, methods, and appropriate use of technology related to numbers, patterns, operations, problem solving, geometry, and algebraic reasoning will be included. Research-based methods and strategies will be applied in the field. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12.

SPE 4643. Instruction for Students with Mild/Moderate Disabilities. (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, and ECE 3603. Concurrent enrollment in SPE 3623, SPE 3653, and SPE 4623 is required. This course is a study of the development and implementation of research-validated instructional strategies. Students will learn how to select learning strategies to meet the individual needs of students with disabilities. Specific learning strategies will be evaluated and implemented in classroom settings. Strategies will address the acquisition, storage, and expression of knowledge. Class sessions will involve direct development in learning strategies and specific problem solving associated with strategies instruction. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. (Formerly titled "Specialized Instructional Methods for Students with Exceptionalities.").

SPE 4653. Practicum in Special Education (Advanced). (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3623, SPE 3633, SPE 3653, SPE 3673, SPE 3683, SPE 3693, SPE 4623, SPE 4643, SPE 4673, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 4683 and SPE 4693 is required. The study of the planning, application, and evaluation of Individual Educational Plans (IEPs) and the specialized educational and related services provided under the law to students with disabilities. Students enrolled in this course will be required to spend 6 to 8 hours a week in field-based placements for a total of 60 to 80 hours, dependent upon field placement program needs and requirements and on instructor requirements. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC-12. Restricted course; advisor code required for registration. (Formerly EDP 4653. Credit cannot be earned for both SPE 4653 and EDP 4653.).

SPE 4673. Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities. (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 3633, SPE 3673, and SPE 3683 is required. This course is a study of the development and implementation of research-validated instructional strategies for students with autism spectrum disorders and developmental disabilities. Course topics will include the use of formal and informal assessments to determine appropriate academic, social, and behavioral goals and objectives for students and identifying research-validated strategies to assist students with meeting these goals. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC-12.

SPE 4683. Communication and Collaboration in Special Education. (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3623, SPE 3633, SPE 3653, SPE 3673, SPE 3683, SPE 3693, SPE 4623, SPE 4643, SPE 4673, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 4653 and SPE 4693 is required. This course will focus on the collaborative roles and responsibilities of teachers, school district personnel, and parents/families in providing individualized educational programs to students with disabilities. Effective strategies for communication and collaboration will be studied. Additional course topics include consultation, collaborating with general education teachers, and designing and managing the activities of paraprofessionals.

SPE 4693. Assistive Technology. (3-0) 3 Credit Hours.

Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3623, SPE 3633, SPE 3653, SPE 3673, SPE 3683, SPE 3693, SPE 4623, SPE 4643, SPE 4673, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 4653 and SPE 4683 is required. This course is a study of the use of technology in facilitating the teaching and learning of students with disabilities. Course will emphasize the selection and use of assistive technology devices and services for students, including those used for communication and mobility and those that facilitate performance in academic environments.

SPE 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

Sport, Event, and Tourism Management (SET)

Sport, Event, and Tourism Management (SET) Courses

SET 2123. Survey of Tourism. (3-0) 3 Credit Hours.

Historical development and organizational structure of the tourism industry. Emphasis is placed on the inter-relationship between tourist, resident, business, and government. (Formerly MKT 2123 and MKT 3123. Credit cannot be earned for more than one of the following: SET 2123, MKT 2123, or MKT 3123.).

SET 3043. Attractions Management. (3-0) 3 Credit Hours.

Prerequisite: SET 2123. Explores all aspects of managing visitor attractions such as amusement parks, theme parks, museums, national parks, and heritage sites.

SET 3233. Sport Management. (3-0) 3 Credit Hours.

Prerequisite: SET 2123. Focuses on allocating resources and managing sport and recreation operations. Students will receive an in-depth look at the human resources function as it pertains to sport organizations, including recruitment, selection, compensation, hiring/firing, employee training and motivation, compliance with state and federal regulations, risk management, and community relations.

SET 3283. Sport and Event Media Relations. (3-0) 3 Credit Hours.

Prerequisite: SET 2123. Examines the media relations function in sport organizations with a special emphasis on the relationships between journalists and sport organizations, and the role of information specialists. Media relations responsibilities include organizing and managing game/event coverage, promoting events, and developing publicity campaigns.

SET 3313. Sport Tourism and Events. (3-0) 3 Credit Hours.

Prerequisite: SET 2123. Comprehensive study of the sport travel and tourism industry. The industry includes both participatory sport tourism (e.g., skiing, golf, and adventure trips) and event-based sport tourism (e.g., the Olympics, professional and amateur sports, and World Cup soccer). Covers all aspects of sport tourism including economics, finance, and marketing.

SET 3333. Event Management. (3-0) 3 Credit Hours.

Prerequisite: SET 2123. This course presents the event planning process from the inception of an event idea through the development stage, planning, and implementation. The model presented in this class pertains to all types of events including meetings, festivals, fairs, expos, recreation and sport events, fundraisers, etc. with a particular focus on project planning, budgeting, and marketing the event.

SET 3413. Resort and Club Management. (3-0) 3 Credit Hours.

Prerequisite: SET 2123. The management, marketing, and operations of resort and private club properties including hotel resorts, timeshares, casinos, private country clubs, golf and tennis clubs, fitness clubs, and entertainment facilities. Students will get an overview of all aspects of the business and are provided the opportunity to gain an understanding of the differences between profit and nonprofit organizations.

SET 3433. Meetings and Conventions. (3-0) 3 Credit Hours.

Prerequisite: SET 2123. An overview of the meetings and conventions industry. The course introduces students to the basics of association and corporate meetings, including program planning, budgeting, marketing, public relations, food and beverage and hospitality planning, audio visual and transportation coordination, exhibit sales and management, contract and lease negotiations, and human resources.

SET 3543. Economics of Tourism and Leisure. (3-0) 3 Credit Hours.

Prerequisites: ECO 2023 and SET 2123. Application of economic theories and principles to the areas of tourism, sport, and recreation. Some of the main topics include supply and demand, market structure, competition, and the impacts on the economy, society, and the environment.

SET 4233. Sport Facility and Event Management. (3-0) 3 Credit Hours.

Prerequisite: SET 3233. Overview of managing a facility used for sports, conventions, and entertainment events. Topics may include conducting feasibility studies, market research, facility design and layout, event bidding, quality assurance, risk management, and event staffing. (Same as FM 4233. Credit cannot be earned for both SET 4233 and FM 4233.)

SET 4543. Destination Marketing. (3-0) 3 Credit Hours.

Prerequisite: SET 2123. Emphasizes a strategic approach to marketing for tourism destinations: communities, regions, attractions, and resorts. Focus is on the optimal planning, development, and positioning in the context of the overall marketing plan. Includes consideration of environmental and resource requirements, as well as tourism's social and cultural ramifications. (Formerly MKT 4543. Credit cannot be earned for both SET 4543 and MKT 4543. Marketing majors cannot take SET 4543 as an upper-division Marketing elective.)

SET 4811. Special Topics in Sport, Event and Tourism Management. (1-0) 1 Credit Hour.

Analysis and discussion of events, issues, and trends affecting management and marketing in the sport, event or tourism industries. May be repeated for credit when topics vary.

SET 4812. Special Topics in Sport, Event and Tourism Management. (2-0) 2 Credit Hours.

Analysis and discussion of events, issues, and trends affecting management and marketing in the sport, event or tourism industries. May be repeated for credit when topics vary.

SET 4813. Special Topics in Sport, Event and Tourism Management. (3-0) 3 Credit Hours.

Analysis and discussion of events, issues, and trends affecting management and marketing in the sport, event or tourism industries. May be repeated for credit when topics vary.

SET 4921. Independent Study in Sport, Event and Tourism Management. (0-0) 1 Credit Hour.

Prerequisites: Student must have a 3.0 College of Business grade point average and permission in writing from the Tourism instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms. The course may require independent research, reading, planning, discussion, and/or writing under the direction of a sponsoring faculty instructor. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a Bachelor of Business Administration degree.

SET 4922. Independent Study in Sport, Event and Tourism Management. (0-0) 2 Credit Hours.

Prerequisites: Student must have a 3.0 College of Business grade point average and permission in writing from the Tourism instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms. The course may require independent research, reading, planning, discussion, and/or writing under the direction of a sponsoring faculty instructor. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a Bachelor of Business Administration degree.

SET 4923. Independent Study in Sport, Event and Tourism Management. (0-0) 3 Credit Hours.

Prerequisites: Student must have a 3.0 College of Business grade point average and permission in writing from the Tourism instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms. The course may require independent research, reading, planning, discussion, and/or writing under the direction of a sponsoring faculty instructor. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a Bachelor of Business Administration degree.

SET 4941. Internship in Sport, Event and Tourism Management. (0-0) 1 Credit Hour.

Prerequisites: MGT 3003, student must currently have a 2.5 UTSA grade point average, and permission in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for additional requirements and required forms. The course is designed for students seeking supervised full- or part-time work experience in the sport, event or tourism industries. May be repeated for credit, but not more than 6 semester credit hours of Internship in Tourism will apply to a Bachelor in Business Administration degree.

SET 4942. Internship in Sport, Event and Tourism Management. (0-0) 2 Credit Hours.

Prerequisites: MGT 3003, student must currently have a 2.5 UTSA grade point average, and permission in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for additional requirements and required forms. The course is designed for students seeking supervised full- or part-time work experience in the sport, event or tourism industries. May be repeated for credit, but not more than 6 semester credit hours of Internship in Tourism will apply to a Bachelor in Business Administration degree.

SET 4943. Internship in Sport, Event and Tourism Management. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, student must currently have a 2.5 UTSA grade point average, and permission in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for additional requirements and required forms. The course is designed for students seeking supervised full- or part-time work experience in the sport, event or tourism industries. May be repeated for credit, but not more than 6 semester credit hours of Internship in Tourism will apply to a Bachelor in Business Administration degree.

Statistics (STA)

Statistics (STA) Courses

STA 1043. Introduction to Quantitative Reasoning. (3-0) 3 Credit Hours. (TCCN = MATH 1442)

Prerequisite: Satisfactory performance on placement examination. Intended primarily for liberal arts majors, this course provides an overview of statistical methods useful for judgment and decision making under conditions of uncertainty. The emphasis of the course will be on using quantitative reasoning to gain insight and draw conclusions from observations. The common pitfalls of statistical studies and common myths about the fallacies of inference will be discussed. Topics may include data analysis, inference, correlation, and regression. (Formerly titled "Introduction to Statistical Reasoning.")

STA 1053. Basic Statistics. (3-0) 3 Credit Hours. (TCCN = MATH 1342)

Prerequisite: Satisfactory performance on placement examination. Descriptive statistics; histograms; measures of location and dispersion; elementary probability theory; random variables; discrete and continuous distributions; interval estimation and hypothesis testing; simple linear regression and correlation; one-way analysis of variance, and applications of the chi-square distribution. May be applied toward the core curriculum requirement in Mathematics.

STA 1403. Probability and Statistics for the Biosciences. (3-0) 3 Credit Hours. (TCCN = MATH 2342)

Prerequisite: A grade of "C-" or better in MAT 1193 or an equivalent. Probability and statistics from a dynamical perspective, using discrete-time dynamical systems and differential equations to model fundamental stochastic processes such as Markov chains and the Poisson processes important in biomedical applications. Specific topics to be covered include probability theory, conditional probability, Markov chains, Poisson processes, random variables, descriptive statistics, covariance and correlations, the binomial distribution, parameter estimation, hypothesis testing and regression. (Formerly STA 1404. Credit cannot be earned for both STA 1403 and STA 1404.)

STA 2303. Applied Probability and Statistics for Engineers. (3-0) 3 Credit Hours.

Prerequisite: MAT 1224. Fundamental concepts of probability and statistics with practical applications to engineering problems. Emphasis on statistical distribution models used in reliability and risk analysis of engineering design; probabilistic reasoning; Bayes' theorem; bivariate and multivariate distributions and their applications.

STA 3003. Applied Statistics. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in MAT 1033, MAT 1093, MAT 1214, STA 3023, or an equivalent. Introduction to the Scientific Method; principles of sampling and experimentation; scales of measurement, exploratory data analysis; introduction to basic probability; models for discrete and continuous data; simple simulations and inferences based on resampling; fundamentals of hypothesis testing and confidence intervals; introduction to analysis of variance and linear regression model. The course will emphasize data analysis and interpretation and effective communication of results through reports or presentations.

STA 3013. Multivariate Analysis for the Life and Social Sciences. (3-0) 3 Credit Hours.

Prerequisite: STA 3003, STA 3513, or an equivalent. This course emphasizes application of statistics in organizations. Topics include, but are not limited to the multivariate normal distribution, tests on means, discriminant analysis, cluster analysis, principal components, and factor analysis. Use of software packages will be emphasized. Open to students of all disciplines.

STA 3023. Statistical Mathematics. (3-0) 3 Credit Hours.

Prerequisite: MAT 1093 or an equivalent course or satisfactory performance on a placement examination. Concepts include sequences, series, convergence, limit, continuity, derivative, optimization, the fundamental theorem of calculus, methods of integration, Taylor expansions, function of several variables, partial derivatives, and multivariate transformations. Other topics include vector and matrix algebra, determinants, inverse matrix, eigenvalues and eigenvectors.

STA 3313. Experiments and Sampling. (3-0) 3 Credit Hours.

Prerequisite: One of the following: MS 1023, STA 1043, STA 1053, STA 2303, STA 3003, or an equivalent. Research techniques for collecting quantitative data: sample surveys, designed experiments, simulations, and observational studies; development of survey and experimental protocols; measuring and controlling sources of measurement error.

STA 3433. Applied Nonparametric Statistics. (3-0) 3 Credit Hours.

Prerequisite: One of the following: MS 3313, STA 2303, STA 3003, or STA 3513. Tests of location, goodness-of-fit tests, rank tests, tests based on nominal and ordinal data for both related and independent samples, and measures of association.

STA 3513. Probability and Statistics. (3-0) 3 Credit Hours.

Prerequisites: STA 3003 and one of the following: STA 3023 or MAT 1224. Axiomatic probability; random variables; discrete and continuous distributions; bivariate and multivariate distributions and their applications; mixture distributions; moments and generating functions, bivariate transformations.

STA 3523. Mathematical Statistics. (3-0) 3 Credit Hours.

Prerequisite: STA 3513 or an equivalent. Sampling distributions and the Central Limit Theorem; order statistics; estimation including method of moments and maximum likelihood; properties of estimators; hypothesis testing including likelihood ratio tests; introduction to ANOVA and regression.

STA 3533. Probability and Random Processes. (3-0) 3 Credit Hours.

Prerequisite: EGR 2323. Probability, random variables, distribution and density functions, limit theorems, random processes, correlation functions, power spectra, and response of linear systems to random inputs.

STA 3813. Discrete Data Analysis. (3-0) 3 Credit Hours.

Prerequisite: STA 3003 or STA 3513. Introduction to methods for analyzing discrete (categorical) data. Course emphasizes the uses and interpretations of the methods rather than the underlying theory. Topics include Two-way and Three-Way Contingency Tables, Partial Association, Cochran-Mantel-Haenszel Method, Generalized Linear models, Model Inference and Model Checking, Logistic Regression, Loglinear Models, and Models for Matched Pairs.

STA 4133. Introduction to Programming and Data Management in SAS. (3-0) 3 Credit Hours.

This course introduces essential programming concepts using SAS Enterprise Guide software, with a focus on data management and the preparation of data for statistical analyses. Topics include reading raw data, creating temporary and permanent datasets, manipulating datasets, data prompts, summarizing data, displaying data using tables, charts, and plots, and conducting basic statistical analyses. This course also demonstrates how to write, generate, and modify SAS code within SAS Enterprise Guide.

STA 4143. Data Mining. (3-0) 3 Credit Hours.

Prerequisite: STA 4133 or equivalent. Acquisition, organization, exploration, and interpretation of large data collections. Data cleaning, representation and dimensionality, multivariate visualization, clustering, classification, and association rule development. A variety of commercial and research software packages will be used.

STA 4233. Statistical Applications Using SAS Software. (3-0) 3 Credit Hours.

Prerequisites: STA 4133 or approval of instructor; and one of the following: MS 3313, STA 3003, STA 3513, or STA 3523. Analysis of datasets using the statistical software package SAS. Methods for analyzing continuous and categorical data will be introduced, using procedures from Base SAS, SAS/GRAPH and SAS/STAT software. Techniques for efficient programming will be stressed. Examples will be drawn from regression analysis, analysis of variance, categorical analysis, multivariate methods, simulation, and resampling.

STA 4643. Introduction to Stochastic Processes. (3-0) 3 Credit Hours.

Prerequisite: STA 3513. Probability models, Poisson processes, finite Markov chains, including transition probabilities, classification of states, limit theorems, queuing theory, and birth and death processes.

STA 4713. Applied Regression Analysis. (3-0) 3 Credit Hours.

Prerequisite: MS 3313 or STA 3003. An introduction to regression analysis, with emphasis on practical aspects, fitting a straight line, examination of residuals, matrix treatment of regression analysis, fitting and evaluation of general linear models, and nonlinear regression.

STA 4723. Introduction to the Design of Experiments. (3-0) 3 Credit Hours.

Prerequisite: MS 3313 or STA 3003. General concepts in the design and analysis of experiments. Emphasis will be placed on both the experimental designs and analysis and tests of the validity of assumptions. Topics covered include completely randomized designs, randomized block designs, complete factorials, fractional factorials, and covariance analysis. The use of computer software packages will be stressed.

STA 4753. Time-Series Analysis. (3-0) 3 Credit Hours.

Prerequisite: STA 3513 or STA 3533, or an equivalent. Development of descriptive and predictive models for time-series phenomena. A variety of modeling approaches will be discussed: decomposition, moving averages, time-series regression, ARIMA, and forecasting errors and confidence intervals.

STA 4803. Statistical Quality Control. (3-0) 3 Credit Hours.

Prerequisite: STA 2303, STA 3003, STA 3513, or an equivalent. Statistical methods are introduced in terms of problems that arise in manufacturing and their applications to the control of manufacturing processes. Topics include control charts and acceptance sampling plans. (Same as MAT 4803. Credit cannot be earned for both STA 4803 and MAT 4803.).

STA 4903. Applied Survival Analysis. (3-0) 3 Credit Hours.

Prerequisite: STA 3523 or an equivalent. Measures of survival, hazard function, mean residual life function, common failure distributions, procedures for selecting an appropriate model, the proportional hazards model. Emphasis on application and data analysis using SAS.

STA 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: A 3.0 College of Business grade point average, permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

STA 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

STA 4933. Internship in Statistics. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing from the instructor, the Department Chair, and the Dean of the College of Business; and a 2.5 UTSA grade point average. See academic advisor for required forms and additional requirements. Supervised full- or part-time work experience in statistics. Offers opportunities for applying statistics in private businesses or public agencies. May be repeated for credit, but not more than 6 semester credit hours will apply to a bachelor's degree.

STA 4953. Special Studies in Statistics. (3-0) 3 Credit Hours.

Prerequisites: Consent of instructor, Department Chair and Dean of the College. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

STA 4961. Actuarial Science Examination Preparation. (1-0) 1 Credit Hour.

An organized course offering specialized study for Actuarial Science Examinations. Topics covered include General Probability, Random Variables and Probability Distributions, Multivariate Distributions, and Risk Management and Insurance. May be repeated twice for credit.

STA 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: STA 3523 and consent of instructor, Department Chair and Dean of the College. Enrollment limited to students applying for Honors in Management Science and Statistics. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Theater (THR)

Theater (THR) Courses

THR 1013. Acting I. (3-0) 3 Credit Hours. (TCCN = DRAM 1351)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Fundamental techniques of acting, emphasizing the actor's approach to characterization and relationship to all parts of the play's production.

THR 1023. Acting II. (3-0) 3 Credit Hours. (TCCN = DRAM 1352)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. Sustained character portrayal. Intensive work in stage movement and vocal techniques, including dialects.

THR 2113. Intermediate Acting I. (3-0) 3 Credit Hours.

Prerequisite: Completion of THR 1013 and THR 1023, or placement by audition with instructor consent. Concepts, skills, and techniques of acting styles, collaborative work in all aspects of play production, and development of understanding of the actor's role through performance.

THR 2123. Intermediate Acting II. (3-0) 3 Credit Hours.

Prerequisite: Completion of THR 2113, or placement by audition with instructor consent. Continued development of concepts, skills, and techniques of acting styles required to understand the role of the performer in play production.

University Peer Mentorship Experience (UPM)

University Peer Mentorship (UPM) Courses

UPM 1000. University Peer Mentorship Experience. (0-0) 0 Credit Hours.

The University Peer Mentorship Experience provides a peer-mentor who will help students navigate campus life at UTSA. Students will have an opportunity to develop a broader understanding of UTSA by participating in programming designed to assist in the academic and social transition from high school to college. This Experience is limited to first- and second-semester freshmen and freshmen transfer students. The Experience is completed during the semester immediately following or prior to completion of AIS 1203.

Urban and Regional Planning (URP)

Urban and Regional Planning (URP) Courses

URP 3123. Introduction to Community and Regional Planning and Urban Design. (3-0) 3 Credit Hours.

Introduction to basic practices in community planning and urban design issues, including theoretical/historical bases; developing neighborhood plans/projects; indicators and evaluation of neighborhood sustainability; community patterns; institutional framework, site planning analysis; zoning ordinances; subdivision ordinances; community services, circulation; mixed-use, and community development programming. (Formerly ARC 4123. Credit cannot be earned for both ARC 4123 and URP 3123.).

URP 3153. Comparative Urban and Regional Development. (3-0) 3 Credit Hours.

A survey of the origin of the contemporary city and region, current conditions, and future trends.

URP 3163. Visual Communications for Community and Regional Planning. (3-0) 3 Credit Hours.

Expressing planning data and geographic information in visual terms for land use planning projects. Application of related computer software including GIS. (Formerly ARC 4163. Credit cannot be earned for both ARC 4163 and URP 3163.).

URP 4113. Urban Project Development. (3-0) 3 Credit Hours.

Introduction to a range of physical planning topics including land use planning, growth management, infrastructure planning, and urban design. Planning mechanisms such as codes and urban design guidelines that help regulate development of the built environment will be emphasized. Planning at different scales including municipal, comprehensive plans, specific area plans, site plans, and state and regional plans. (Formerly ARC 4113. Credit cannot be earned for both ARC 4113 and URP 4113.).

URP 4123. Sustainable Community Development. (3-0) 3 Credit Hours.

Introduction to land use planning topics including new urbanism, growth management, sustainable infrastructure planning, and LEED Neighborhood Development.

URP 4213. Urban Planning and Public Health. (3-0) 3 Credit Hours.

Survey of the interdependence of urban planning and public health to include the impact of physical environments on the health and quality of life of people in housing and neighborhoods.

URP 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered. Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

URP 4953. Special Studies in Urban and Regional Planning. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary.

Women's Studies (WS)

Women's Studies (WS) Courses

WS 2013. Introduction to Women's Studies. (3-0) 3 Credit Hours.

This course introduces students to core concepts and frameworks in women's, gender, and sexuality studies, using interdisciplinary and cross-cultural approaches. Women and gender are studied as socially constructed categories created through institutions such as culture, the law, the media, and globalization. The course will provide students with the tools of critical feminist inquiry to assess how women's lived experiences are shaped by such categories as race, ethnicity, class, nationality, sexuality, and disability. Students will examine theories and analytical concepts that emerge from specific historical periods and social movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly WGS 2013. Credit cannot be earned for both WS 2013 and WGS 2013.).

WS 2023. Introduction to LGBTQ Studies. (3-0) 3 Credit Hours.

This interdisciplinary course introduces concepts and theories within LGBTQ Studies. Topics include issues related to lesbian, gay, bisexual, transgender, and queer communities. The central focus is to examine, challenge, and destabilize normative conceptualizations and representations of gender and sexuality. This class emphasizes different aspects of LGBTQ studies including history, queer theory, popular culture, media, and literature. Course work centers on complicating notions of queer identity through intersections of race, class, gender, and globalization.

WS 3613. Feminist Research Methodologies. (3-0) 3 Credit Hours.

Rigorous examination of the theory, application, and ethical and epistemological concerns of feminist research. What does it mean to "research as a feminist"? Are there particular ways of producing knowledge as women? Investigating women's issues within and across a range of traditional disciplines—history, arts, humanities, sciences, education, health, economics, law, etc.—the course will engage issues of researcher-subject relationships, representation, and value-driven research, to respond to dominant theories of knowledge production.

WS 3953. Special Topics in Women Writers. (3-0) 3 Credit Hours.

This course examines women's texts with special attention to understanding gender as a category of analysis. Variable topics may include women in the sciences, women and technology, literary and cultural representations, women and business, historical and political change, questions of class and nation, queer or transgender theories, or medical and health experiences. This class may emphasize the importance of intersecting categories of analysis including gender, race, ethnicity, and sexuality. May be repeated for credit when topics vary. (Formerly WGS 4853 and WS 4853.).

WS 4623. Feminist Theories. (3-0) 3 Credit Hours.

This course will introduce multidisciplinary explorations of theorists' attempts to describe, explain, and critique social institutions. Students will examine theoretical positions on gender and women in the study of the humanities and/or social sciences. Topics may include the ways in which women have been represented in cultural production with special consideration of race, ethnicity, class, sexuality, and nationalism. (Formerly WGS 4623. Credit cannot be earned for both WS 4623 and WGS 4623.).

WS 4863. Feminism and Globalization. (3-0) 3 Credit Hours.

Theoretical, historical, and empirical analysis of how current processes of globalization are transforming the actual conditions of women's lives, labor, gender ideologies, and politics in complex and contradictory ways. Topics include feminist exploration of colonialism, capitalism, economic restructuring policies, and resistance in consumer and environmental movements.

WS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College with which the instructor is affiliated. Independent reading, research, discussion, and/or writing under the direction of a faculty member. A maximum of 3 semester credit hours of Independent Study in Women's Studies may be applied to the Minor in Women's Studies. May be repeated for credit, but no more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. (Formerly WGS 4913.).

WS 4933. Internship in Women's Studies. (0-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Supervised experience relevant to Women's Studies. May be repeated once for credit, but no more than 3 semester credit hours will apply to the Women's Studies major. (Formerly WGS 4933.).

WS 4953. Special Topics in Women's Studies. (3-0) 3 Credit Hours.

This course offers an examination of an individual topic or set of issues in Women's Studies. May be repeated for credit when topics vary. (Formerly WS 3713.).

WS 4973. Seminar in Women's Studies. (3-0) 3 Credit Hours.

Prerequisite: 12 upper-division semester credit hours in Women's Studies. This undergraduate seminar, limited to junior and senior Women's Studies majors and minors, offers the opportunity to study a special topic, issue, author, or period in Women's Studies. May be repeated once for credit when topics vary.

WS 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Supervised research and preparation of an Honors Thesis for the purpose of earning Women's Studies Honors. May be repeated once with advisor approval.

Writing Program (WRC)

Writing Program (WRC) Courses

WRC 0203. Integrated Reading and Writing. (3-0) 3 Credit Hours.

Integrated Reading and Writing offers students the opportunity to increase reading and writing skills before enrollment in WRC 1013 Freshman Composition I. It affords intensive practice in the writing process, including prewriting, drafting, organization, sentence structure, and use of grammar, spelling, and punctuation. The course also offers practical instruction in strategies for improving critical reading of academic writing, such as determining word meaning; understanding main ideas and supporting details; identifying the writer's purpose, point of view, and intended meaning; analyzing relationships among ideas; using critical reasoning when reading; and developing study skills. It also introduces synthesis, library research, and documentation. Offered on a credit/no-credit basis, the course does not satisfy any degree requirements. This course may be repeated.

WRC 1013. Freshman Composition I (Q). (3-0) 3 Credit Hours. (TCCN = ENGL 1301)

Freshman Composition I focuses on developing and expressing ideas clearly and effectively to communicate with various audiences for various purposes and occasions, through written, oral, aural, and visual venues by means of individual and team projects. Students review principles of the writing process, including planning; logical, organizational, and developmental strategies; revision and editing. They are also introduced to rhetorical techniques (persuasion) and quantitative literacy. The course develops students' critical thinking skills through practice with summary and paraphrase, analysis, evaluation, and synthesis of multiple sources drawn from a variety of cultural and intellectual contexts. Students engage in extensive library research. Students also practice ethical decision-making through responsible selection, use, and documentation of sources.

WRC 1023. Freshman Composition II (Q). (3-0) 3 Credit Hours. (TCCN = ENGL 1302)

Prerequisite: WRC 1013. Building on the skills introduced in Freshman Composition I, Freshman Composition II focuses on persuasive communication. The course provides intensive writing practice in the use of logical organization and development to help students express ideas clearly and effectively, orally, aurally, visually, and in writing. Students also address varied audiences for different purposes and use different genres (e.g., essay, editorial, proposal). Freshman Composition II continues to develop quantitative literacy and to promote ethical decision-making through responsible methods of data gathering and analysis to produce valid arguments based on factual information and effective use of sources for support. Students may enroll in a discipline-specific section of the course, such as architecture, business, communication (documentaries), quantitative literacy, or science (environmental issues, health professions, and science vs. pseudoscience).

WRC 3013. Writing Strategies for the Pre-law Student. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in rhetoric. This writing course is designed for students planning to become attorneys. It emphasizes clear, concise writing, as well as editing conventions necessary to produce readable and correct prose, free of jargon and inflated language. It provides students with an opportunity to improve their ability to express their understanding of law and its application to fact scenarios. The course introduces organizational strategies used to identify relevant elements of facts and law appropriate to the construction of well-written arguments and documents.

WRC 4123. Topics in Writing. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Writing intensive course on various aspects of writing, such as Writing Center tutoring, scientific technical writing, legal technical writing, and writing in the disciplines. May be repeated for credit when topics vary. (Formerly WRC 3123.).

Texas Common Course Numbering System

UTSA is a participant in the Texas Common Course Numbering (TCCN) System. A standard set of four-character abbreviations for academic disciplines and four-digit course numbers, this system aids in the transfer of lower-division academic courses among colleges and universities in Texas. The first digit of the number represents the academic level of the course (0 for subfreshman, 1 for freshman, and 2 for sophomore); the second represents the semester credit hours value of the course. Most community colleges in Texas have adopted TCCN as their course numbering system; others cross-reference their courses with TCCN.

The table below lists TCCN course designation and their UTSA equivalents. UTSA courses are designated by four-digit numbers following a two- or three-letter abbreviation of the academic discipline. The first digit indicates the level of the course (0 are developmental education courses, 1 and 2 are lower-division). The second and third digits are used within the colleges by each department to distinguish individual courses. The fourth digit indicates the semester-credit-hour value of each course.

Core curriculum courses that do not have a Texas Common Course Number (TCCN) have been assigned an "acceptable substitute" TCCN. If a student completes a course bearing this number, it will be accepted as meeting the applicable core curriculum requirement.

TCCN Course	UTSA Course
ACCT 2301	ACC 2013
ACCT 2302	ACC 2033
ANTH 2301	ANT 2033
ANTH 2302	ANT 2043
ANTH 2346	ANT 1013
ANTH 2351	ANT 2053
ANTH 2351	BBL 2003
ANTH 2351 - UTSA Acceptable Substitute	ANT 2063
ANTH 2351 - UTSA Acceptable Substitute	BBL 2243
ARAB 1411	ARA 1014
ARAB 1412	ARA 1024
ARAB 2311	ARA 2013
ARAB 2312	ARA 2023
ARCH 1301	ARC 2413
ARCH 1302	ARC 2423
ARCH 1305	ARC 1413
ARCH 1305	ARC 1513
ARCH 1311	ARC 1113
ARCH 1403	ARC 1214
ARTS 1301	ART 1103
ARTS 1303	AHC 1113
ARTS 1304	AHC 1123
ARTS 1304 - UTSA Acceptable Substitute	AHC 1133
ARTS 1311	ART 1003
ARTS 1312	ART 1013
ARTS 1316	ART 1213
ARTS 1317	ART 1223

ARTS 1325	ART 1143
ARTS 2316	ART 2113
ARTS 2326	ART 2613
ARTS 2333	ART 2413
ARTS 2346	ART 2713
ARTS 2348	ART 2313
ASTR 1103	AST 1031
ASTR 1303	AST 1013
ASTR 1304	AST 1033
BCIS 1305	IS 1403
BIOL 1111	ES 1111
BIOL 1113	ES 1121
BIOL 1308	BIO 1233
BIOL 1309	BIO 1243
BIOL 1311	ES 1113
BIOL 1313	ES 1123
BIOL 1322	BIO 2043
BIOL 1406	BIO 1404
BIOL 1407	BIO 1414
BIOL 2101	BIO 2051
BIOL 2101	BIO 2091
BIOL 2102	BIO 2061
BIOL 2102	BIO 2111
BIOL 2120	BIO 1061
BIOL 2301	BIO 2053
BIOL 2301	BIO 2083
BIOL 2302	BIO 2063
BIOL 2302	BIO 2103
BIOL 2316	BIO 2313
BIOL 2320	BIO 1053
CHEM 1111	CHE 1121
CHEM 1112	CHE 1131
CHEM 1311	CHE 1103
CHEM 1312	CHE 1113
CHEM 1405	CHE 1004
CHEM 1407	CHE 1014
CHEM 2223	CHE 2612
CHEM 2323	CHE 2603
CHIN 1411	CHN 1014
CHIN 1412	CHN 1024
CHIN 2311	CHN 2013
CHIN 2312	CHN 2023
COMM 1307	COM 2343
COSC 1300	CS 1023
COSC 1336	CS 1063
COSC 1437	CS 1711
COSC 1437	CS 1713
COSC 2436	CS 2121
COSC 2436	CS 2123
CRIJ 1301	CRJ 1113
CRIJ 1306	CRJ 2813
CRIJ 1307	CRJ 2153

CRIJ 2313	CRJ 2513	GEO 1301	GEO 1013
CRIJ 2328	CRJ 2213	GEO 1303	GEO 1103
DANC 2303	DAN 2003	GEO 1304	GEO 1123
DRAM 1351	THR 1013	GEO 1305	ES 1213
DRAM 1352	THR 1023	GERM 1411	GER 1014
ECON 1301	ECO 2003	GERM 1412	GER 1024
ECON 2301	ECO 2013	GERM 2311	GER 2013
ECON 2302	ECO 2023	GERM 2312	GER 2023
ENGL 1301	WRC 1013	GOVT 2304	POL 2533
ENGL 1302	WRC 1023	GOVT 2305	POL 1013
ENGL 2311	ENG 2413	GOVT 2306	POL 1133
ENGL 2322	ENG 2223	GOVT 2306	POL 1213
ENGL 2323	ENG 2233	GREE 1411	GRK 1114
ENGL 2327	ENG 2263	GREE 2311 - UTSA Acceptable Substitute	GRK 2113
ENGL 2328	ENG 2293	HIST 1301	HIS 1043
ENGL 2331 - UTSA Acceptable Substitute	CLA 2033	HIST 1302	HIS 1053
ENGL 2331 - UTSA Acceptable Substitute	CLA 2323	HIST 2301	HIS 2053
ENGL 2331 - UTSA Acceptable Substitute	CSH 2313	HIST 2312 - UTSA Acceptable Substitute	HIS 2543
ENGL 2331 - UTSA Acceptable Substitute	ENG 2213	HIST 2312 - UTSA Acceptable Substitute	HIS 2573
ENGL 2331 - UTSA Acceptable Substitute	ENG 2383	HIST 2321	HIS 2123
ENGL 2331 - UTSA Acceptable Substitute	ENG 2423	HIST 2322	HIS 2133
ENGL 2331 - UTSA Acceptable Substitute (or FREN 2303)	FRN 2333	HIST 2323	HIS 2553
ENGL 2331 - UTSA Acceptable Substitute	GER 2333	HIST 2323 - UTSA Acceptable Substitute	HIS 2583
ENGL 2331 - UTSA Acceptable Substitute	ITL 2333	HUMA 1301	HUM 1203
ENGL 2331 - UTSA Acceptable Substitute	RUS 2333	HUMA 1301	HUM 2023
ENGL 2331 - UTSA Acceptable Substitute (or SPAN 2323)	SPN 2333	HUMA 1301 - UTSA Acceptable Substitute	HIS 2533
ENGL 2332 - UTSA Acceptable Substitute	CSH 1103	HUMA 1302	HUM 2033
ENGL 2333 - UTSA Acceptable Substitute	CSH 1113	HUMA 1302 - UTSA Acceptable Substitute	CSH 2113
ENGL 2341	ENG 2013	HUMA 1305	MAS 2013
ENGR 1201	EE 1322	HUMA 1311	MAS 2023
ENGR 1201	ME 1302	HUMA 1315	HUM 2053
ENGR 1204	ME 1402	HUMA 2319 - UTSA Acceptable Substitute	WS 2013
ENGR 2301	EGR 2103	HUMA 2323	CSH 1213
ENGR 2302	EGR 2513	ITAL 1411	ITL 1014
ENGR 2303	EGR 2213	ITAL 1412	ITL 1024
ENGR 2304	CS 2073	ITAL 2311	ITL 2013
ENGR 2305	EE 2213	ITAL 2312	ITL 2023
ENVR 1301	ES 2013	JAPN 1411	JPN 1014
ENVR 1302	ES 2023	JAPN 1412	JPN 1024
FREN 1411	FRN 1014	JAPN 2311	JPN 2013
FREN 1412	FRN 1024	JAPN 2312	JPN 2023
FREN 2311	FRN 2013	KINE 1301	KIN 2303
FREN 2312	FRN 2023	KINE 1338	KIN 2123
GEOG 1300	GRG 1013	KORE 1411	KOR 1014
GEOG 1301	GRG 2613	KORE 1412	KOR 1024
GEOG 1302	GRG 2623	LATI 1411	LAT 1114
GEOG 1303	GRG 1023	LATI 1412	LAT 1124
GEO 1103	GEO 1111	LATI 2311	LAT 2113
GEO 1104	GEO 1131	LATI 2312	LAT 2123
GEO 1105	ES 1211	MATH 1314	MAT 1073
		MATH 1314 - UTSA Acceptable Substitute	MAT 1023
		MATH 1325	MAT 1033

MATH 1332	MAT 1043	PSYC 2301	PSY 1013
MATH 1342	STA 1053	PSYC 2314	PSY 2503
MATH 1350	MAT 1153	PSYC 2316	PSY 2523
MATH 1351	MAT 1163	PSYC 2319	PSY 2533
MATH 1442	ES 1314	RUSS 1411	RUS 1014
MATH 1442	STA 1043	RUSS 1412	RUS 1024
MATH 2312	MAT 1093	RUSS 2311	RUS 2013
MATH 2313	MAT 1193	RUSS 2312	RUS 2023
MATH 2318	MAT 2233	SGNL 1301	ASL 1013
MATH 2321	EGR 2323	SGNL 1302	ASL 1023
MATH 2342	STA 1403	SOCI 1301	SOC 1013
MATH 2405	CS 2233	SOCI 1301 - UTSA Acceptable Substitute	AMS 2043
MATH 2413	MAT 1214	SOCI 1301 - UTSA Acceptable Substitute	IDS 2113
MATH 2414	MAT 1224	SOCI 1306	SOC 2013
MATH 2415	MAT 2214	SOCI 2320 - UTSA Acceptable Substitute	BBL 2033
MUSI 1162	MUS 2601	SOCI 2340	SOC 2023
MUSI 1181	MUS 1521	SPAN 1411	SPN 1014
MUSI 1183	MUS 1531	SPAN 1412	SPN 1024
MUSI 1211	MUS 1112	SPAN 2311	SPN 2013
MUSI 1212	MUS 1132	SPAN 2312	SPN 2023
MUSI 1216	MUS 1102	SPAN 2316	SPN 2513
MUSI 1217	MUS 1122	SPAN 2324 - UTSA Acceptable Substitute	BBL 2023
MUSI 1263	MUS 2132	SPCH 1311	COM 1043
MUSI 1286	MUS 1141	SPCH 1315	COM 2113
MUSI 1303	MUS 2623	SPCH 1321	COM 1053
MUSI 1306	MUS 2683	SPCH 2144	COM 2801
MUSI 1306 - UTSA Acceptable Substitute	MUS 2743	SPCH 2341	COM 2123
MUSI 1307	MUS 2243	TECA 1318	HTH 2133
MUSI 1307 - UTSA Acceptable Substitute	MUS 2693		
MUSI 1310	MUS 2633		
MUSI 1310 - UTSA Acceptable Substitute	MUS 2663		
MUSI 1310 - UTSA Acceptable Substitute	MUS 2673		
MUSI 2211	MUS 2152		
MUSI 2212	MUS 2162		
MUSI 2216	MUS 2102		
MUSI 2217	MUS 2112		
PHED 1304	HTH 2513		
PHED 1346	BIO 1033		
PHIL 1301	PHI 2013		
PHIL 1304	HUM 2093		
PHIL 2303	PHI 1043		
PHIL 2303	PHI 2043		
PHIL 2306 - UTSA Acceptable Substitute	PHI 2123		
PHIL 2316	PHI 2023		
PHIL 2317	PHI 2033		
PHYS 1101	PHY 1611		
PHYS 1102	PHY 1631		
PHYS 1301	PHY 1603		
PHYS 1302	PHY 1623		
PHYS 1310	PHY 1013		
PHYS 2325	PHY 1943		
PHYS 2326	PHY 1963		

National Standardized Tests: Minimum Scores Required for Credit at UTSA

Students are encouraged to maximize their experience at UTSA by accessing the credit that can be received through the Advanced Placement (p. 399) (AP) program, C (p. 400) College Level Examination Program (p. 400) (CLEP), Competency Based Exams (p. 401) (CBE), Dantes (p. 401) (DSST), International Baccalaureate Diploma (p. 402) (IBD), International Baccalaureate Certificate (p. 403) (IBC), and SAT Subject Tests (p. 404). The following tables provide information on minimum scores required in order to receive credit at UTSA. There are University policies that may affect whether or not credit can be received through these tests. The cutoff scores displayed on these pages are valid beginning August 1, 2015. These scores and course credits are subject to change without notice. For more information regarding credit by examination, please review the AP, CLEP, CEB, DSST, & IB information on the Testing Services Web site (<http://www.utsa.edu/testing>). Testing Services is located in MS 1.01.04 on the Main Campus, phone 210-458-4125, and in BV 1.302 on the Downtown Campus, phone 210-458-2941.

Advanced Placement (AP[®])

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded ¹
Art	History of Art	3	AHC elective, 3 hours (lower division)
Biology	Biology	4	BIO 1404, BIO 1414
Chemistry	Chemistry	4	CHE 1103, CHE 1121 (lab)
		5	CHE 1103, CHE 1121 (lab), CHE 1113, CHE 1131 (lab)
Chinese	Chinese Language and Culture	2	CHN 1014, CHN 1024
		3	CHN 1014, CHN 1024, CHN 2013, CHN 2023
Computer Science	Computer Science A	4	CS 1063
Economics	Macroeconomics	3	ECO 2013
	Microeconomics	3	ECO 2023
English	English Language and Composition	3	WRC 1013
	English Literature 4 & Composition	4	ENG 2013

Environmental Science	Environmental Science	3	ES 2013	
		4	ES 2013, ES 2023	
French	French Language and Culture	2	FRN 1014, FRN 1024	
		3	FRN 1014, FRN 1024, FRN 2013, FRN 2023, FRN 3023	
Geography	Human Geography	4	GRG elective, 3 hours (lower division)	
German	German Language and Culture	2	GER 1014, GER 1024	
		3	GER 1014, GER 1024, GER 2013, GER 2023	
		4	GER 1014, GER 1024, GER 2013, GER 2023, GER 3023	
		5	GER 1014, GER 1024, GER 2013, GER 2023, GER 3023, and GER electives, 6 hours (upper division)	
History	United States History	3	HIS 1043, HIS 1053	
	European History	3	HIS 2563	
	World History	3	HIS 2123 or HIS 2133 ²	
Italian	Italian Language and Culture	2	ITL 1014, ITL 1024	
		3	ITL 1014, ITL 1024, ITL 2013, ITL 2023	
Japanese	Japanese Language and Culture	2	JPN 1014, JPN 1024	
		3	JPN 1014, JPN 1024, JPN 2013, JPN 2023	
Latin	Latin	3	LAT 1114	
Mathematics	Calculus AB	4	MAT 1214	
		Calculus BC	3	MAT 1214
			4	MAT 1214, MAT 1224
	Statistics	4	STA 1043 or STA 1053 ³	
Physics	Physics B	4	PHY 1603, PHY 1623	
	Physics C a. Mechanics	4	PHY 1943	

	b. Electricity & Magnetism	4	PHY 1963
Political Science	Comparative Government & Politics US	3	GLA 2633 or POL 2633
	Government & Politics US	3	POL 1013 ⁴
Psychology	Psychology	3	PSY 1013
Spanish	Spanish Language	2	SPN 1014, SPN 1024
		3	SPN 1014, SPN 1024, SPN 2013, SPN 2023
		4	SPN 1014, SPN 1024, SPN 2013, SPN 2023, and SPN elective, 3 hours (upper division)
	Spanish Literature and Culture	3	SPN Literature elective, 3 hours (upper division)

- 1 All credit shown in this table as elective credit is lower division unless otherwise indicated.
- 2 Credit will be given for either HIS 2123 or HIS 2133, but not for both.
- 3 Credit will be given for either STA 1043 or STA 1053, but not for both.
- 4 This credit is earned after completion of POL 1133 Texas Politics and Society (available as a Competency Based Exam - see chart below for requirements). Any substitutions or equivalencies allowed by an advisor will not be the responsibility of Testing Services.

College Level Examination Program (CLEP®)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded ¹
Biology	Biology	65	BIO 1233, BIO 1243
	Natural Sciences	65	BIO elective, 3 hours (lower division)
Business	Financial Accounting	60	ACC 2013
	Introductory Business Law	50	BLW 3013
	Principles of Management	50	MGT 3013
	Principles of Marketing	50	MKT 3013
Chemistry	Chemistry	58	CHE 1103, CHE 1121 (lab)
		68	CHE 1103, CHE 1121 (lab), CHE 1113, CHE 1131 (lab)

Computer Science ²	Information Systems & Computer Applications	60	CS 1033
		50	IS 3003
Economics	Principles of Macroeconomics	50	ECO 2013
	Principles of Microeconomics	50	ECO 2023
English	College Composition Modular with Essay	50 ³	WRC 1013
		63 ³	WRC 1013, WRC 1023
	American Literature	63	ENG 2263, ENG 2293
	English Literature	63	ENG 2223, ENG 2233
	Analyzing and Interpreting Literature	63	ENG 2013
	with Essay	63 ³	ENG 2213
French	College Level French Language	43	FRN 1014
		50	FRN 1014, FRN 1024
		56	FRN 1014, FRN 1024, FRN 2013
		62	FRN 1014, FRN 1024, FRN 2013, FRN 2023
German	College Level German Language	43	GER 1014
		50	GER 1014, GER 1024
		56	GER 1014, GER 1024, GER 2013
		63	GER 1014, GER 1024, GER 2013, GER 2023
Health	Human Growth and Development	50	HTH 3543
History	History of the United States I	50	HIS 1043
	History of the United States II	50	HIS 1053
Mathematics	College Mathematics	50	MAT elective, 3 hours (lower division)
	College Algebra	50	MAT 1073
	Precalculus	50	MAT 1093
	Calculus	50	MAT 1214
Philosophy & Classics	Humanities	50	HUM 2023

Political Science	American Government	50	POL 1013 ⁴
Psychology	Introductory Psychology	50	PSY 1013
Sociology	Introductory Sociology	50	SOC 1013
Spanish	College Level Spanish Language	43	SPN 1014
		50	SPN 1014, SPN 1024
		58	SPN 1014, SPN 1024, SPN 2013
		66	SPN 1014, SPN 1024, SPN 2013, SPN 2023

- ¹ All credit shown in this table as elective credit is lower division unless otherwise indicated.
- ² This examination is the same for both credit granting areas. The score determines which credit is awarded. Credit cannot be used for both IS and CS. Students having earned course credit for IS 3003 cannot earn test credit for CS 1033.
- ³ With "pass" on essay scored by English Department faculty.
- ⁴ This credit is earned after completion of POL 1133 Texas Politics and Society. Any substitutions or equivalencies allowed by an advisor will not be the responsibility of Testing Services.

Competency Based Exams (CBE)

Students who take and successfully pass a departmentally created Competency Based Exam will receive credit in the course for which the exam was taken. The grade of "CR" will not be included in the UTSA grade point average but the hours for the course will contribute to overall hours taken and count toward the minimum UTSA residence requirements.

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded ¹
English	Writing Portfolio ²	Pass	WRC 1013
		Pass	WRC 1023
Mathematics	College Algebra with Applications	70%	MAT 1023
		70%	MAT 1073
Political Science	Texas Government & Politics ³	5 with AP - 5	POL 1133
		8 with AP - 4	POL 1133
		11 with AP - 3	POL 1133

- ¹ All credit shown in this table as elective credit is lower division unless otherwise indicated.

- ² Specific requirements must be met prior to attempting the Competency Portfolio Option including: a) Student must be a Junior or Senior who has written papers for their major/degree requirements; and b) Student has not been able to register for Freshman Composition I or II. Contact the Writing Program at 210-458-5363 for further details.
- ³ Students must also be eligible for AP credit for American Government **prior** to attempting the Competency Exam. Students who earn a score of 1 or 2 on the AP American Government exam are not eligible to take the Competency Exam.

Dantes Subject Standardized Test (DSST)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded ¹
Anthropology	General Anthropology	400	ANT 1013
Astronomy	Astronomy	400	AST 1013
Biology	Substance Abuse	400	BIO 1033
Business	Business Ethics & Society	425	GBA 2013
	Business Law II	50	BLW 3023
	Business Mathematics	400	MAT elective, 3 hours (lower division)
	Human Resource Management	425	MGT 3613
	Introduction to Business	425	MGT 3013
	Money and Banking	400	FIN 3313
	Organizational Behavior	425	MGT 3023
	Principles of Finance	400	FIN 3014
	Principles of Financial Accounting	425	ACC 2013
	Principles of Supervision	425	MGT 3023, MGT 4923
Criminal Justice	Criminal Justice	400	CRJ 1113
	Introduction to Law Enforcement	400	CRJ 2213
English	Technical Writing	400	ENG 2413
Geography	Human/Cultural Geography	400	GRG 2623
Geology	Physical Geology	350	GEO 1103
	Environment & Humanity: The Race to Save the Planet	400	ES 2013
History	Civil War & Reconstruction	400	HIS 3553
	Rise & Fall of the Soviet Union	400	HIS 3753
Humanities	Introduction to World Religions	410	HUM 2093

Mathematics	Fundamentals of College Algebra	400	MAT 1023
Psychology	Lifespan Developmental Psychology	400	PSY 2503

¹ All credit shown in this table as elective credit is lower division unless otherwise indicated.

International Baccalaureate Diploma Examination (IBD)

The University of Texas at San Antonio accepts credit by examination through several testing venues. In accordance with Section 51.968 of the Texas Education Code, students who receive an International Baccalaureate (IB) diploma will be eligible for a minimum of 24 hours course credit if scores of "4" or better were achieved on all IB examinations attempted. The current articulation of how credit will be disseminated for standard level (SL) and higher level (HL) International Baccalaureate Diploma examinations is available below or on the Testing Services Website at www.utsa.edu/testing/ (<http://www.utsa.edu/testing/>).

Examination	UTSA Course	Minimum Score Required
College of Business		
Business Management HL	ACC 2003	4
	MGT 3013, MGT 3613, MGT 3023	4
	MKT 3013	4
Economics HL	ECO 2013, ECO 2023	4
College of Education & Human Development		
Sports, Exercise & Health Science SL	KIN 2303	4
College of Liberal & Fine Arts		
Social & Cultural Anthropology HL	ANT 2053	4
Arabic Language B HL	ARA 1014, ARA 1024	4
	ARA 1014, ARA 1024, ARA 2013, ARA 2023	5
Arabic Language A1, A2, AB, or B SL	ARA 1014, ARA 1024	4
Chinese Language A1 or A2 HL	CHN 1014, CHN 1024, CHN 2013, CHN 2023	4
Chinese Language B HL	CHN 1014, CHN 1024	4
	CHN 1014, CHN 1024, CHN 2013, CHN 2023	5
Chinese Language A1 or A2 SL	CHN 1014, CHN 1024	4
English A Literature SL/HL	ENG 2013	4
English A Language & Literature SL/HL	ENG 2013	4

French Language A1 or A2 HL	FRN 6hrs (upper division)	4
	FRN 9hrs (upper division)	5
French Language B HL	FRN 1014	2
	FRN 1014, FRN 1024	3
	FRN 1014, FRN 1024, FRN 2013	4
	FRN 1014, FRN 1024, FRN 2013, FRN 2023	6
French SL	FRN 1014, FRN 1024	4
Geography SL/HL	GRG 1023, GRG 3123, GRG 3133, GRG 3213, GRG 3633, & POL 3463	4
Global Politics (Pilot) SL/HL	GLA 2603 or POL 2603	4
German Language A1, A2, or B HL	GER 1014, GER 1024	2
	GER 1014, GER 1024, GER 2013	3
	GER 1014, GER 1024, GER 2013, GER 2023, & 6hrs (upper division)	4
	GER 1014, GER 1024, GER 2013, GER 2023, & 9hrs (upper division)	6
German Language A1, AB, & B SL	GER 1014, GER 1024	4
German Language A2 SL	GER 1014, GER 1024, GER 2013	4
European History HL	HIS 2563	4
Islamic History HL	HIS 2543	4
Italian Language A1 or A2 HL	ITL 6hrs (upper division)	4
	ITL 9hrs (upper division)	6
Italian Language B HL	ITL 1014, ITL 1024	2
	ITL 1014, ITL 1024, ITL 2013	3
	ITL 1014, ITL 1024, ITL 2013, ITL 2023, & 6hrs (upper division)	4
Italian SL	ITL 1014, ITL 1024	4
Japanese Language A1, A2, or B HL	JPN 1014, JPN 1024	4
	JPN 1014, JPN 1024, JPN 2013, JPN 2023	5
Japanese Language A1, A2, AB, or B SL	JPN 1014, JPN 1024	4
Music HL	MUS 2623	4
Philosophy HL	PHI 2013	4
Classical Languages HL	GRK 1114 or LAT 1114 ¹	4
Psychology SL/HL	PSY 1013	4

Russian Language A1, A2, or B HL	RUS 1014, RUS 1024, RUS 2013, RUS 2023, & 6hrs (upper division)	4
Russian Language A1, A2, AB, or B SL	RUS 1014, RUS 1024	4
Spanish Language A1 or A2 HL	SPN 1014, SPN 1024	2
	SPN 1014, SPN 1024, SPN 2013	3
	SPN 1014, SPN 1024, SPN 2013, SPN 2023, & 6hrs (upper division)	4
Spanish Language B HL	SPN 1014, SPN 1024	2
	SPN 1014, SPN 1024, SPN 2013	3
	SPN 1014, SPN 1024, SPN 2013, SPN 2023	4
Theater SL/HL	THR 1013	4
College of Science		
Biology SL/HL	BIO 1404, BIO 1414	4
Chemistry HL	CHE 1103, CHE 1113	4
Computer Science SL/HL	CS 1713	4
Environmental Science SL	ES 2013, ES 2023, ES 2021, ES 2031	4
Mathematics HL	MAT 1093, MAT 1214	4
Physics HL	PHY 1013, PHY 1603, PHY 1623	4
Spanish Language A1, A2, AB, or B SL	SPN 1014, SPN 1024	4

¹ Credit will be awarded for the Classical Language studied, either GRK 1114 or LAT 1114. Credit is not awarded for both.

International Baccalaureate Certificate Examination (IBC)

International Baccalaureate Certificate students can currently receive the following course credit for the higher level (HL) exams if they meet the score criteria listed on the table below, also available on the Testing Services Website at www.utsa.edu/testing/ (<http://www.utsa.edu/testing/>).

Examination	UTSA Course	Minimum Score Required
College of Business		
Business/Management HL	MKT 3013	4
	MGT 3013, MGT 3613	4
Economics HL	ECO 2013, ECO 2023	4
College of Liberal & Fine Arts		
Social and Cultural Anthropology HL	ANT 2053	6
Arabic Language B HL	ARA 1014, ARA 1024, ARA 2013, ARA 2023	5
Chinese Language A1 or A2 HL	CHN 1014, CHN 1024, CHN 2013, CHN 2023	4

Chinese Language B HL	CHN 1014, CHN 1024	4
	CHN 1014, CHN 1024, CHN 2013, CHN 2023	5
English Language A - Literature HL	ENG 2013	4
English Language A - Language & Literature HL	ENG 2013	4
French A1, A2, or B HL	FRN 1014, FRN 1024	2
	FRN 1014, FRN 1024, FRN 2013	3
	FRN 1014, FRN 1024, FRN 2013, FRN 2023	4
	FRN 1014, FRN 1024, FRN 2013, FRN 2023 & 6 hours upper division	5
	FRN 1014, FRN 1024, FRN 2013, FRN 2023 & 9 hours upper division	6
Geography HL	GRG 1023, GRG 3213, GRG 3633, POL 3463	5
German Language A1, A2, or B HL	GER 1014, GER 1024	2
	GER 1014, GER 1024, GER 2013	3
	GER 1014, GER 1024, GER 2013, GER 2023	4
	GER 1014, GER 1024, GER 2013, GER 2023 & 6 hours upper division	5
	GER 1014, GER 1024, GER 2013, GER 2023 & 9 hours upper division	6
European History HL	HIS 2563	6
Islamic History HL	HIS 2543	6
Global Politics (Pilot) HL	GLA 2603 or POL 2603	4
Italian Language A1, A2, or B HL	ITL 1014, ITL 1024	2
	ITL 1014, ITL 1024, ITL 2013	3
	ITL 1014, ITL 1024, ITL 2013, ITL 2023	4
	ITL 1014, ITL 1024, ITL 2013, ITL 2023 & 6 hours upper division	5
	ITL 1014, ITL 1024, ITL 2013, ITL 2023 & 9 hours upper division	6
Japanese Language B HL	JPN 1014, JPN 1024	2
	JPN 1014, JPN 1024, JPN 2013	3

	JPN 1014, JPN 1024, JPN 2013, JPN 2023	4
	JPN 1014, JPN 1024, JPN 2013, JPN 2023 & 6 hours upper division	5
	JPN 1014, JPN 1024, JPN 2013, JPN 2023 & 9 hours upper division	6
Music HL	MUS 2623	4
Philosophy HL	PHI 2013	5
Classical Languages HL ¹	LAT 1114 or GRK 1114	5
Psychology HL	PSY 1013	5
Russian Language A1, A2, or B HL	RUS 1014, RUS 1024, RUS 2013	2
	RUS 1014, RUS 1024, RUS 2013, RUS 2023	3
	RUS 1014, RUS 1024, RUS 2013, RUS 2023 & 6 hours upper division	4
	RUS 1014, RUS 1024, RUS 2013, RUS 2023 & 9 hours upper division	5
Spanish Language A1, A2, or B HL	SPN 1014, SPN 1024, SPN 2013	2
	SPN 1014, SPN 1024, SPN 2013, SPN 2023	3
	SPN 1014, SPN 1024, SPN 2013, SPN 2023 & 6 hours upper division	4
	SPN 1014, SPN 1024, SPN 2013, SPN 2023 & 9 hours upper division	5
Theatre HL	THR 1013	4
College of Sciences		
Biology HL	BIO 1404, BIO 1414	4
Chemistry HL	CHE 1103, CHE 1113	5
Computer Science HL	CS 1063, CS 1713	4
Environmental Science HL	ES 2013, ES 2023, ES 2021, ES 2031	4
Mathematics HL	MAT 1093, MAT 1214	4
Physics HL	PHY 1013	4

Biology	Biology - Molecular	700	BIO 1404
	Biology - Ecological	700	BIO 1414
Philosophy & Classics	Latin	700	LAT 1114

¹ All credit shown in this table as elective credit is lower division unless otherwise indicated.

¹ Credit will be awarded for the Classical Language studied, either LAT 1114 or GRK 1114. Credit is not awarded for both.

SAT[®] Subject Tests

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded ¹
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Faculty

College of Architecture, Construction and Planning

Name	Title	Education
Architecture		
Alexander, John	Associate Professor	B.Arch., University of Detroit; M.Arch. History, Ph.D. University of Virginia
Araiza, Armando	Lecturer II	B.Arch., The University of Texas at San Antonio; M.A., Pratt Institute
Azari, Rahman	Assistant Professor	B.Arch., M.Arch., Sahand University of Technology; Ph.D., University of Washington
Baron, Robert	Professor	B.Arch., University of Oregon, M.Arch., University of Washington; M.S.Arch., University of Pennsylvania
Beeson-Toker, Saadet	Assistant Professor	B.Arch., M.S., Ph.D., Middle East Technical University, Ankara, Turkey
Blizard, Mark	Associate Professor	B.Arch., M.Arch., Virginia Polytechnic Institution and State University
Blount, Craig	Senior Lecturer	B.Arch., The University of Texas at Austin
Burian, Edward R.	Associate Professor	B.Arch., University of Southern California, Los Angeles; M.Arch., Yale University
Caine, Ian	Assistant Professor	B.A., M.Arch., Washington University; M.S., Massachusetts Institute of Technology
Canizaro, Vincent B.	Associate Professor	B.E.D., Texas A&M University; M.Arch., University of California, Berkeley; Ph.D., Texas A&M University
Dawes, James	Lecturer III	B.Arch., The University of Texas at Austin
Doganer, Sedef	Associate Professor	B.Arch., M.S., Ph.D., Istanbul Technical University
Dupont, William	Professor	San Antonio Conservation Society, Endowed Professorship; A.B., Brown University; M.Arch., University of Pennsylvania
Gribou, Julius M.	Professor	B. Design, University of Florida, Gainesville; M.Arch., University of Illinois at Urbana-Champaign
Hays, Diane B.	Senior Lecturer	B.S., M.Arch., The University of Texas at Austin
Kamal, Azza	Assistant Professor of Research	M.S., Ph.D., Cairo University, Egypt; M.S., Texas A&M University
Lewis, James Rick	Senior Lecturer	B.Arch., Texas Tech University; M.Arch., The University of Texas at Austin

Lombardi, Angela	Assistant Professor	B.A., M.Arch., Ph.D., University of Rome
Murphy, Jr., John D.	Professor	B.S., M.S., Ph.D., Texas A&M University
Nishimoto, Taeg	Professor	B.Arch., Waseda University, Tokyo, Japan; M.Arch., Cornell University
Ohlenbusch, Darryl	Lecturer III	B.E.D., Texas A&M University; M. Arch., Columbia University
Pemberton-Haugh, Sue Ann	Senior Lecturer	B.E.D., M.Arch., Texas A&M University
Petrov, Antonio	Assistant Professor	M.Arch. and Urban Design, University of Applied Sciences Koblenz, Germany; M.Arch., Illinois Institute of Technology; D.Des., Harvard University Graduate School of Design
Rashed-Ali, Hazem	Associate Professor	B.S., Ain Shams University, Cairo; M.S., Oxford School of Architecture; Ph.D., Texas A&M University
Roff, Shelley	Associate Professor	B.E.D., Texas A&M University; M.Arch., University of California, Berkeley; Ph.D., Brown University
Rogers, Candid W.	Lecturer III	B.A., M.Arch., The University of Texas at Austin
Suk, Jae-Yong	Assistant Professor	B. Engineering, Ajou University; M. Building Science, Ph.D., University of Southern California
Tangum, Richard R.	Professor	B.Arch., Texas Tech University; M. Arch., Virginia Polytechnic Institute; D.E.D., Texas A&M University
Temple, Stephen A.	Associate Professor	B.Arch., Carnegie Mellon University; M.S.Arch. Studies, The University of Texas at Austin
Valentine, Maggie	Professor	B.A., California State University, Northridge; Ph.D., University of California, Los Angeles

Construction Science

Gunhan, Suat	Associate Professor	B.Arch., M.S., Dokuz Eylul University; Ph.D., Illinois Institute of Technology
Hatipkarasulu, G. Selen	Senior Lecturer	B.S., Cukurova University; M.S., Ph.D., Louisiana State University
Hatipkarasulu, Yilmaz	Associate Professor	B.S., Cukurova University; M.S., Ph.D., Louisiana State University
Liu, Rui	Assistant Professor	B.S., B.Man., M.Man., Tianjin University; M.S., Ph.D., University of Florida
Palomera-Arias, Rogelio	Assistant Professor	B.S., University of Puerto Rico; M.S., Ph.D., Massachusetts Institute of Technology
Patin, Jude W. P.	Senior Lecturer	B.S., Southern University, B.S., Louisiana State University, M.S., Arizona State University
Reed, Richard	Senior Lecturer	B.B.A., The University of Texas at Austin; J.D., St. Mary's University

Trahan, Gabriel	Senior Lecturer	B.A., M.B.A., University of New Orleans; Ph.D., Louisiana State University
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College of Business

Name	Title	Education
Lengel, Robert H.	Associate Professor Emeritus	B.S., Pennsylvania State University; M.B.A., M.S., Rensselaer Polytechnic Institute; Ph.D., Texas A&M University
Lengnick-Hall, Cynthia	Professor Emeritus	B.A., M.B.A., University of California, Los Angeles; Ph.D., The University of Texas at Austin
Saegert, Joel G.	Professor Emeritus	B.A., Ph.D., University of Texas at Austin
Sandoval, Rodolpho	Associate Professor Emeritus	B.B.A., Texas A&I University; J.D., Texas Southern School of Law; M.A., Notre Dame University; LL.M., Harvard Law School

Accounting

Asthana, Sharad C.	Professor	B.S., M.S., Lucknow University; Ph.D., The University of Texas at Austin
Boone, Jeff	Professor	B.B.A., M.S., Texas A&M University; Ph.D., University of North Texas
Cole, Cathy J.	Assistant Professor	B.A., North Carolina State University; M.Acc., University of Illinois; Ph.D., George Washington University
Fasci, Martha A.	Associate Professor	B.S., Our Lady of the Lake University; M.B.A., University of North Texas; Ph.D., The University of Texas at Austin
Forgione, Dana A.	Professor	B.B.A., M.B.A., M.S.A., Ph.D., University of Massachusetts Amherst
Groff, James E.	Professor	B.A., University of Iowa; M.B.A., Stetson University; Ph.D., University of Iowa
Linthicum, Cheryl L.	Professor	B.S., Colorado State University; M.B.A., Pittsburgh State University; Ph.D., Oklahoma State University
Liu, Hu (Harrison)	Assistant Professor	Ph.D., Texas A&M University; Ph.D., University of Houston
Lopez-Acevedo, Dennis M.	Associate Professor	B.B.A., University of Puerto Rico; M.B.A., George Washington University; Ph.D., University of Arkansas
Mao, Juan	Assistant Professor	Ph.D., University of Kansas
Nwaeze, Emeka T.	Associate Professor	B.S., M.P.A., Southern University; Ph.D., University of Connecticut
Pitman, Marshall K.	Professor	B.S., M.B.A., Eastern Illinois University; Ph.D., University of Mississippi

Raman, Krishnamurthy	Professor	BA., University of Calcutta; M.B.A., India Institute of Management, Calcutta; Ph.D., Indiana University
Sanders, Elaine	Associate Professor	B.B.A., Eastern New Mexico University; M.Acc., Ph.D., The University of Oklahoma
Smith, Pamela C.	Professor	B.S., University of Virginia; M.S., Ph.D., Virginia Polytechnic Institute and State University
Vaello, Linda R.	Lecturer II	B.B.A., M.B.A., The University of Texas at San Antonio
Welch, Sandra T.	Professor	B.S., Texas Woman's University; M.P.A., The University of Texas at San Antonio; Ph.D., Texas A&M University
Ye, Zhongxia (Shelly)	Assistant Professor	Ph.D., Temple University
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Economics

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Kinesiology, Health, and Nutrition			Ullevig, Sarah	Assistant Professor	B.S., Texas State University; Ph.D., University of Texas Health Science Center
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College of Engineering

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Biomedical Engineering

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Electrical and Computer Engineering

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Anthropology

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History			Turney, Elaine	Senior Lecturer	B.A., Baylor University; M.A., The University of Texas at San Antonio; Ph.D., Texas Christian University
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Philosophy and Classics

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College of Sciences

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