

COLLEGE OF ARTS AND SCIENCES

COLLEGE OF ARTS AND SCIENCES

Sonny B. Davis, *Interim Dean*
Dolores Guerrero, *Interim Assistant Dean*
Todd A. Lucas, *Assistant Dean*
Janis Bryant, *Executive Assistant to the Dean*
Miranda Joiner, *Academic Adviser*
Maria Hinojosa, *Academic Adviser*
Pamela K. Rauch, *Academic Adviser*
Kleberg Hall 130. MSC 117. Extension 2761.

The College of Arts and Sciences is unique in offering students a broad-based, liberal arts education transmitting a core of knowledge and cultural values. The college provides the service courses required by all university academic degree programs and specialized courses that may lead to employment or post baccalaureate studies.

The college is committed to providing a humanistic and analytical education through a student-focused educational environment. Its faculty excel in teaching, scholarship and service. The curriculum and its orientation are responsive to the cultural diversity of the students and to the entire South Texas region. In this way, the college helps to expand the academic, social and cultural horizons and expectations of the people it serves.

Through teaching, scholarship and service, the college provides students with a core of cultural knowledge and understanding necessary to function as global citizens and with the life skills and judgment essential to contribute fully to society. The college provides oral and written communication skills and computer literacy required for all disciplines and helps students attain general professional competency in the area of their major. Fulfilling its mission, the college fosters lifelong learning.

The college is composed of the following departments (with the nonteaching degrees each offers):

- Art (B.A.; B.F.A.)
- Biological and Health Sciences (B.A., Biology; B.S., Biology; Biomedical Sciences, Communication Sciences and Disorders)
- Chemistry (B.S.)
- Communications and Theatre Arts (B.A., Communications, Theatre Arts)
- History (B.A.)
- Language and Literature (B.A., English, Spanish)
- Mathematics (B.A.; B.S.)
- Music (B.M., Music, Performance)
- Physics and Geosciences (B.A., Physics; B.S., Geology, Physics)
- Political Science (B.A.)
- Psychology and Sociology (B.A., Psychology, Sociology; B.S., Criminology; B.S.W., Social Work)

The college also houses programs in Military Science and Religion.

Laboratory Fee

For each laboratory course a fee of \$2 to \$30 is charged depending upon cost of materials used in the course.

Teaching Certification

Students seeking a certificate to teach in the secondary schools of Texas must earn a bachelor's degree in a recognized major. The State Board for Educator Certification approved new teaching fields and grade levels for certification beginning in 1999. Majors in the College of Arts and Sciences that may lead to all-level certification include the following:

- Art
- Music

Majors in the College of Arts and Sciences that may lead to secondary certification include the following:

- Biology (Life Science)
- Chemistry
- Communications (Speech, Journalism)
- English (see Language and Literature)
- Geology (Science emphasis, see Physics and Geosciences)
- History
- History (Social Studies emphasis)
- Mathematics
- Physics (Science emphasis)
- Spanish (see Language and Literature)

For specific degree requirements, contact the chair of the department of the academic discipline involved. For additional information, refer to the College of Education section regarding the Standard Certificate in this catalog.

Pre-Law

Students who desire to enter the law profession should consult the Pre-Law Adviser in the Department of Political Science upon enrollment regarding a degree plan and selection of courses.

Pre-Health Professions

Students who desire to pursue any health profession (medicine, dentistry, physical therapy, pharmacy, nursing, etc.) should consult the Pre-Health Professions Adviser in the Department of Biological and Health Sciences. General information regarding programs offered by Texas A&M-Kingsville is listed separately in this catalog.

Requirements for the Degree

All students obtaining a bachelor's degree must satisfy the "General Requirements for Graduation" as set forth in an earlier section of this catalog. This includes, among others, the communication skills requirement, residence requirements, correspondence courses limitations and grade average rules.

Each program sets the minimum number of hours required for its major and for graduation. A minimum of 45 of the total number of hours must be on the advanced level. Individual degree programs are outlined below.

A minimum grade point average of 2.0 is required on (1) all course work specified for the degree, (2) all course work attempted at this university, (3) all courses in the major and the minor where required on work taken at this university and (4) all courses transferred for the minor when no courses in the minor field are taken at this university.

College 1201 Courses

ARTS 1201, BIOL 1201 and SOCI 1201 are designed to satisfy a college-wide requirement using broadly interdisciplinary content. They do not count as hours in any specific major or minor.

Communication Skills

Some departments, though not all, in the college have a communications skills requirement for graduation. The following departments have a communications skills requirement: Biological and Health Sciences, Chemistry, Communications and Theatre Arts, Language and Literature and Political Science.

Foreign Language

All Bachelor of Arts degrees must include two years (12 SCH) of foreign language study.

Major

A major shall consist of a minimum of 24 semester hours in one subject, 6 of which must be taken at this university. At least 50% of the work offered in the major field must be advanced. Electives in the major field are limited to 6 hours above the number of hours required for the degree. Double majors must complete the specific requirements for both fields.

Any hours taken in the major and the minor beyond the maximum limits set here will correspondingly increase the total number of hours required for the degree by the same amount.

Minors

Students receiving a Bachelor of Arts or a Bachelor of Science degree (except for double majors and certain degrees with Teaching Certification) must have a recognized minor. Unless otherwise indicated, a minor consists of a minimum of 18 hours. Certain minors require more; see "Recognized Minors" below. Six hours in the minor field must be on the advanced level. Electives in any minor are limited to 6 hours above the minimum number of hours required in that field. See "Majors" above.

Recognized Minors

The following minors are available to Arts and Sciences majors: Agribusiness, Agriculture Science, Animal Science, Anthropology, Art, Biology, Business Administration, Chemistry, Computer Science, Criminology, English, Environmental Science, French, Generic Special Education, Geography, Geology, Health, History, Human Sciences, Industrial Technology, Journalism, Kinesiology, Mathematics, Mexican American Studies, Military Science, Music, Philosophy, Physics, Plant Science, Political Science, Psychology, Range and Wildlife Management, Reading, Sociology, Southwest Borderlands Studies, Spanish, Spanish Journalism, Speech, Theatre Arts, Women's Studies and Writing.

In addition, anybody of courses which leads to a specific state-recognized teaching certification or similar endorsement, and which meets the minimum requirements indicated above for all minors, may be accepted as a minor, subject to approval by the dean and by the student's major department. An interdisciplinary or other specialized minor which meets the minimum requirements indicated above, may be recognized in individual cases, subject to approval by the student's major department, the dean and any department in which at least 9 hours of the proposed minor will be taken. The dean's office will circulate a list of minors that has been approved under either of these conditions.

Special conditions apply to the following:

Agriculture minors: The academic coordinator in Agriculture must be consulted for required courses.

Biology: The minimum number required will be 24 semester hours or an amount corresponding to six 3 or 4 credit hour courses.

Business Administration: The following courses are required: ACCT 2301, CISA 2302, MGMT 3311, MKTG 3361 and six additional hours to be chosen from any 2000, 3000 or 4000 level College of Business Administration courses for which the prerequisites have been met or instructor approval has been granted.

Chemistry: The minimum number shall be 24 semester hours or an amount corresponding to six 3 or 4 credit hour courses (excluding CHEM 1405, CHEM 1407, CHEM 1481); CHEM 2421 and CHEM 3323/3123 may not **both** be counted for the minimum amount.

English: The minimum number shall be 18 semester hours beyond ENGL 1301-ENGL 1302, 12 of which must be advanced.

Environmental Science: A multidisciplinary minor is offered. Requirements may be obtained from the Chair, Department of Chemistry.

Health: The following courses are required: EDHL 1304, EDHL 2327, EDHL 3331, EDHL 3333, EDHL 3381, EDHL 4331, 4337; BIOL 2401, BIOL 2402; and CHEM 1405.

History: The minimum requirement shall be 21 semester hours, consisting of HIST 1301-1302, HIST 2321-2322 and 9 hours of advanced electives.

Industrial Technology: The minimum requirement shall be 18 semester hours, consisting of ITEN 1311; ITEN 1315 or ITEN 3300; ITEN 2301 or ITEN 3324; and at least three approved advanced ITEN courses in a specified concentration.

Kinesiology: Coursework leading to three minor concentrations is offered: physical education, coaching and exercise science. Consult the Department of Health and Kinesiology section of the catalog for concentration specific requirements.

Mexican American Studies: A multidisciplinary minor is offered. Requirements are listed in the Department of Psychology and Sociology under the heading of Mexican American Studies.

Military Science: An interdisciplinary minor consists of 22 semester hours. Courses should be selected in consultation with the Military Science adviser.

Music: Consult the Department of Music section of the catalog for requirements.

Physics: PHYS 2325/2125, PHYS 2326/2126 and PHYS 3343 are required, plus additional PHYS to total 18-24 semester hours; at least 3 of the additional hours must be advanced. Prospective PHYS minors should consult with their adviser and the physics faculty to identify courses that will meet their needs.

Southwest Borderlands Studies: A multidisciplinary minor is offered. Requirements are listed in the Department of Psychology and Sociology under the heading of Southwest Borderlands Studies.

Spanish Journalism: The following courses are required: COMM 1307, COMM 2309, COMM 2311, COMJ 2129 (COMJ 2129 must be taken twice and must be done either with a Spanish newspaper or with *The South Texan*), SPAN 3311, SPAN 4319, SPAN 4320. Spanish language proficiency must be demonstrated for admission to the program. Students must register to take qualifying exams at the Department of Language and Literature. Students not passing the qualifying examinations must complete basic Spanish courses.

Women's Studies: Students seeking an understanding of women's issues and influence may pursue a minor in women's studies. This minor requires 18 semester hours, including SOCI 2363/WMST 2363 and SOCI 4364/WMST 4300, the core courses. The remaining 12 semester hours may be selected from the following six courses: PSYC 3313/WMST 3313, PSYC 2305/WMST 2305, ARTS 3302/MUSI 3302/THEA 3302/WMST 3302, HIST 4360/WMST 4360, POLS 4364/WMST 4364 and ENGL 4370/WMST 4370 (only when taught from a women's studies perspective).

Writing: The minimum number shall be 18 semester hours of writing courses (excluding ENGL 1301, ENGL 1302, ENGL 2342 and ENGL 2362), 12 of which must be advanced. These must include 3 hours from ENGL 4310 or ENGL 4311; 6-9 hours from ENGL 2314 and ENGL 3300; and 6-9 hours from ENGL 4370 (with writing topic) and ENGL 4390. English majors may not count any course toward both major and minor requirements. *Note:* With approval of the Language and Literature Chair, 3 semester hours may be from writing courses offered in departments outside Language and Literature. *Consult with Language and Literature Chair for course selection.*

DEPARTMENT OF ART (ARTS)

Charles E. Wissinger, *Chair*

Bailey Art Building 190. MSC 157. Extension 2619.

Professors

Barraza, Scherpereel

Associate Professors

Lucas, Wissinger

Assistant Professors

de la Rosa, Vargas

Faculty Emeritus

Schmidt

In the Art Department students learn the fundamentals of artistic expression in order that their developed individuality may lead to one of the many directions found in the field of art. A wonderful gallery allows the department to carry out an ambitious exhibition program that is part of the university commitment to contribute to the cultural environment of nearby communities. In addition, participation by students and faculty in exhibitions provides a significant expressive and educational experience.

The professional B.F.A. degree is offered with possibilities to seek depth through drawing, painting, sculpture, printmaking or ceramics; begin efforts for a career in advertising art, graphic design or art history; or become certified as an all-level art teacher. Art courses are offered for students seeking certification in a second teaching field or as a specialization in an elementary teaching degree. The B.A. with a major in art is designed for students who wish to obtain a liberal arts degree. Most courses are open to interested students as electives.

1201. Introduction to the Arts and the Sciences. 3(2-0)

Designed to serve a dual function: primarily as an introduction to a specific disciplinary area (i.e., arts and humanities: art, history, communications/theatre arts, language and literature, music) and secondarily as general university-level instruction in the methods and practice of critical thinking, analysis and communication. The 30 clock hour course assigns 20 hours to an academic core that is discipline-specific and 10 hours to instruction in and application of academic habits and skills. The course is required of all entering freshmen and transfer students with fewer than 20 hours.

1303. Art History I. (ARTS 1303) 3(3-0)

A lecture course in the history of painting, sculpture, architecture and other art forms from prehistoric times to the 14th century.

1304. Art History II. (ARTS 1304) 3(3-0)

A lecture course in the history of painting, sculpture, architecture and other art forms from the 14th century to the present.

1311. Design I. (ARTS 1311) 3(2-4)

An art studio course in the theory and practice of design. Focus is on the development and application of critical thinking skills to visual problems through the fundamental principles and elements of design. Includes possible applications in secondary education and/or art related professions.

1312. Design II. (ARTS 1312) 3(2-4)

An art studio course in the formal elements of design in three dimensions. Critical thinking skills are furthered through explorations of volume and form. Includes possible applications in secondary education and/or art related professions.

1316. Drawing I. (ARTS 1316) 3(2-4)

A basic course organized to promote confidence in working with the techniques, media and aesthetics of drawing.

1317. Drawing II. (ARTS 1317) 3(2-4)

Studio problems of modelling forms in space, perspective and composition, and combining these into visual expression.

1325. Principles of Art. 3(2-4)

Studio activities with art materials in conjunction with a survey of the history and philosophy of art. Includes the study of art's essential elements.

- 2301. Structure of the Arts.** 3(2-4)
Art, Music and Theatre Arts are combined in selected problems dealing with arts structure. Creative production is the result of studio activity and critique.
- 2313. Graphic Design.** (ARTS 2313) 3(2-4)
Studio emphasis on theory and practices of advertising (commercial) art, planning layout, developing messages, selecting media and executing advertising art.
- 2316. Painting.** (ARTS 2316) 3(2-4)
Studio emphasis in the theory of color and the use of paint to suggest form and space, convey ideas and emotions and explore the dynamics of visual expression.
- 2326. Sculpture.** (ARTS 2326) 3(2-4)
An art studio course which explores three-dimensional concepts of form in a variety of sculptural media.
- 2333. Printmaking.** (ARTS 2333) 3(2-4)
An art studio course which explores various printmaking techniques, including planographic, intaglio, stencil and relief with emphasis on their expressive power.
- 2346. Ceramics.** (ARTS 2346) 3(2-4)
An art studio course in the use of clay for hand building and wheel throwing. Design and decoration are studied from historical and aesthetic perspectives.
- 3302. Women and the Arts.** 3(3-0)
Issues surrounding the participation of women in the arts. Selected women who have contributed to the visual and performing arts throughout history are studied in relation to the culture of their time and the principles related to the arts. No previous experience in theatre, art or music required. Prerequisite: completion of visual/performing arts component requirement. Credit may be obtained in only one of ARTS 3302, MUSI 3302, THEA 3302 or WMST 3302.
- 3377. Materials and Their Use in Art.** 3(2-4)
Study and studio use of the tools, materials, techniques and methods used in the many art processes not covered by drawing, painting, sculpture, printmaking or ceramics.
- 3388. Elements of Art.** 3(2-4)
The essential elements of visual design as they relate to the studio production of works of art.
- 4300. Advanced Drawing.** 3(2-4)
Studio drawing with emphasis on greater mastery of technical skills toward development of a personal vision. May be repeated as needed. Prerequisites: ARTS 1316 and ARTS 1317.
- 4303. History of Mexican American Art.** 3(3-0)
The history of modern Mexican American art, from its roots to contemporary times. Prerequisite: completion of core requirements.
- 4311. Advanced Painting.** 3(2-4)
Studio painting with emphasis on greater mastery of technical skills toward development of a personal vision. May be repeated as needed. Prerequisite: ARTS 2316.
- 4322. Advanced Sculpture.** 3(2-4)
Studio sculpture with emphasis on greater mastery of technical skills toward development of a personal vision. May be repeated as needed. Prerequisite: ARTS 2326.

- 4333. Advanced Printmaking.** 3(2-4)
Studio printmaking with emphasis on greater mastery of technical skills toward development of a personal vision. May be repeated as needed. Prerequisite: ARTS 2333.
- 4344. Advanced Ceramics.** 3(2-4)
Studio ceramics with emphasis on greater mastery of technical skills toward development of a personal vision. May be repeated as needed. Prerequisite: ARTS 2346.
- 4355. Advanced Graphic Design.** 3(2-4)
Studio emphasis on greater mastery of technical skills chosen from the many directions associated with graphic design, such as typography, layout, visualization, conceptual problem solving, the ad campaign, illustration or computer aided design. Students prepare portfolios for entry into undergraduate, graduate or work-related programs. May be repeated as needed. Prerequisite: ARTS 2313.
- 4357. Web and Interface Design.** 3(2-4)
Studio emphasis in the construction of web and interface design, which communicates the function of hypermedia. May be repeated as needed. Prerequisite: ARTS 2313.
- 4399. Senior Exhibition.** 3(3-0)
The execution of a successful professional gallery exhibition by a B.F.A. candidate. Prerequisite: registration for graduation in the semester taken.

Degree Requirements
Bachelor of Arts
Art

| | | | | | | | |
|------------------------------------|----------|--------------------------------|----------|--------------------|----------|------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | ARTS 1304 | 3 | ARTS, adv. | 3 | ARTS, adv. | 6 |
| ARTS 1303 | 3 | ARTS 1317 | 3 | Elective, adv. | 6 | Elective, adv. | 3 |
| ARTS 1316 | 3 | ENGL 1302 | 3 | Minor | 3 | Elective ARTS | 3 |
| ENGL 1301 | 3 | [^] Natural sciences | 3 | Foreign language | <u>3</u> | Foreign language | <u>3</u> |
| [^] Natural sciences | 3 | [^] Social/behavioral | <u>3</u> | | 15 | | 15 |
| Elective | <u>1</u> | | 15 | | | | |
| | 15 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| HIST 1301 | 3 | COMS 1311 | 3 | ARTS, adv. | 6 | ARTS, adv. | 6 |
| POLS 2301 | 3 | HIST 1302 | 3 | Minor, adv. | 6 | Elective, adv. | 3 |
| [^] Literature/philosophy | 3 | POLS 2302 | 3 | Minor | <u>3</u> | Minor, adv. | <u>6</u> |
| [^] Mathematics | 3 | [^] Global learning | 3 | | 15 | | 15 |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | | | | |
| | 15 | | 15 | | | | |
| | | | | | | Total Hours Req'd: 120 | |

*CHEM 1376 and PHYS 1375 suggested. Many alternatives require use of an elective hour each for an accompanying laboratory.

Degree Requirements
Bachelor of Fine Arts

| | | | | | | | |
|-----------------------|----------|------------------------------------|----------|-------------------------------|----------|-------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | ARTS 1304 | 3 | POLS 2301 | 3 | POLS 2302 | 3 |
| ARTS 1303 | 3 | ARTS 1312 | 3 | ARTS, adv. | 9 | ARTS, adv. | 9 |
| ARTS 1311 | 3 | ARTS 1317 | 3 | [^] Natural sciences | 4 | [^] Natural sciences | <u>3</u> |
| ARTS 1316 | 3 | ENGL 1302 | 3 | | 16 | | 15 |
| ENGL 1301 | 3 | [^] Social/behavioral | <u>3</u> | | | | |
| MATH 1314 | <u>3</u> | | 15 | | | | |
| | 17 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ARTS 2313 | 3 | ARTS 2333 | 3 | ARTS, adv. | 6 | ARTS 4399 | 3 |
| ARTS 2316 | 3 | ARTS 2346 | 3 | Electives, adv. | <u>6</u> | ARTS, adv. | 6 |
| ARTS 2326 | 3 | HIST 1302 | 3 | | 12 | Electives, adv. | <u>6</u> |
| COMS 1311 | 3 | [^] Global learning | 3 | | | | 15 |
| HIST 1301 | <u>3</u> | [^] Literature/philosophy | <u>3</u> | | | | |
| | 15 | | 15 | | | | |
| | | | | | | Total Hours Req'd: 120 | |

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

Degree Requirements
Bachelor of Fine Arts
All-Level Art with Teaching Certification

All-Level Art with Teaching Certification. Contact the Department Office for semester-by-semester degree requirements.

DEPARTMENT OF BIOLOGICAL AND HEALTH SCIENCES

Glenn H. Perrigo, *Chair*

Biology-Earth Science Building 108. MSC 158. Extension 3803.

Regents Professor

Perez

Professors

Baskin, Fields, Galloway, Perrigo

Associate Professors

Beams, Brown, Garcia, Hempel, Massa, Perez-Ballester, Soto

Assistant Professors

Ball, J. Escudero, K. Escudero, Oller, Pledger, Powell

Lecturers

Gonzalez, Ratcliff

Faculty Emeriti

Peacock, Wood

The mission of the Department of Biological and Health Sciences at Texas A&M University-Kingsville is to provide excellence in teaching, research and service in a unique biotic and cultural region of Texas. The strong research and teaching base of our faculty allows us to provide the latest information in biology, including strong programs in field biology, biomedical science, and communication sciences and disorders. Our commitment, as always, is to the success of our students.

Students in communication sciences and disorders have the opportunity to gain practical experience in the Communication Disorders Clinic.

Students must earn a "C" or better in English 1302 to meet the department's communication skills requirement. See chair for alternative exam.

BIOLOGY (BIOL)

1106. General Biology Laboratory I.

1(0-3)

A laboratory experience that focuses on laboratory techniques, data collection and analysis. The experience reinforces and promotes an understanding of the cell structure, energy transformation, reproduction and genetic variability. Pre- or corequisite: BIOL 1306 and exemption from READ 0300.

1107. General Biology Laboratory II.

1(0-3)

Experimental and observational techniques used to study plant and animal life at the organismal, population and community levels including morphology, physiology, reproduction and ecology. Pre- or corequisite: BIOL 1307 and exemption from READ 0300.

1111. Introductory Botany Laboratory. (BIOL 1111)

1(0-2)

A laboratory experience that reinforces an understanding of plant form, function and identification. Prerequisites: exemption from or credit in WRIT 0300, READ 0300 and ALGE 0301. Pre or corequisite: BIOL 1311.

1113. Introductory Zoology Laboratory. (BIOL 1113)

1(0-2)

A laboratory experience that reinforces an understanding of animal form, function and identification. Prerequisites: exemption from or credit in WRIT 0300, READ 0300 and ALGE 0301. Pre or corequisite: BIOL 1313.

1201. Introduction to the Arts and the Sciences.

2(2-0)

Designed to serve a dual function, primarily as an introduction to the specific disciplinary area (i.e., sciences and mathematics: biology, chemistry, geosciences, physics, mathematics) and secondarily as general university-level instruction in the methods and practice of critical thinking, analysis and communication. The 30 clock hour course assigns 20 hours to an academic core that is discipline-specific and 10 hours instruction in and application of academic habits and skills. The course is required of all entering freshmen and transfer students with fewer than 20 hours.

- 1306. General Biology I.** 3(3-0-1)
Survey of contemporary biology that covers the chemical basis of life, structure, function and physiology of the cell, molecular biology and microevolution. Three lecture hours and one discussion hour a week for one semester. Concurrent enrollment in BIOL 1106 recommended. Prerequisite: exemption from READ 0300.
- 1307. General Biology II.** 3(3-0-1)
Continuation of a two-semester course in biological concepts; will emphasize organismal diversity and comparative anatomy, reproduction, physiology, ecology, behavior and evolution. Three lecture hours and one discussion hour a week for one semester. Concurrent enrollment in BIOL 1107 recommended. Prerequisite: BIOL 1306 and exemption from READ 0300.
- 1311. Introductory Botany.** (BIOL 1311) 3(3-0)
Survey of the plant kingdom with emphasis on the evolution and diversity of form, function followed by a survey of plant diversity and ecology. Concurrent enrollment in BIOL 1111 is recommended. Prerequisites: exemption from or credit in WRIT 0300, READ 0300 and ALGE 0301.
- 1313. Introductory Zoology.** (BIOL 1313) 3(3-0)
Survey of the animal kingdom with emphasis on the evolution, structure and function followed by a survey of animal diversity and ecology. Concurrent enrollment in BIOL 1113 is recommended. Prerequisites: exemption from or credit in WRIT 0300, READ 0300 and ALGE 0301.
- 1372. Biological Connections.** 3(3-0)
Role of biological sciences in issues of world concern. Some experience in biology assumed (either one year of high school biology or credit or registration in BIOL 1306). Prerequisite: ENGL 1301.
- 2375. Life Science.** 3(3-2)
A survey of the basic concepts of biology. Emphasizes cell structure, energy transformation, plant and animal structures and functions, diversity and classification.
- 2401. Human Anatomy and Physiology I.** (BIOL 2401) 4(3-3)
Gross and microscopic anatomy and physiology of the cells and tissues, integument, skeletal, muscular and nervous systems. Six hours of chemistry recommended.
- 2402. Human Anatomy and Physiology II.** (BIOL 2402) 4(3-3)
Gross and microscopic anatomy and physiology of the circulatory, respiratory, digestive, excretory, endocrine and reproductive systems. Prerequisites: BIOL 2401; 6 hours of chemistry recommended.
- 2421. Elementary Microbiology.** (BIOL 2421) 4(3-3)
Fundamental principles of the relationship of microorganisms to the life of human beings, including their morphology, growth, nutrition and study. Prerequisites: "C" or better in both BIOL 1306 and BIOL 1106; 6 hours of chemistry recommended.
- 3112. Genetics Lab.** 1(0-3)
Fundamental experiments to demonstrate the concepts of inheritance, including cytogenetics techniques, quantitative Mendelian genetics, biochemistry of genetics, linkage and DNA mapping and protein electrophoresis of population and speciation genetics. Prerequisites: concurrent enrollment or already taken BIOL 3402; 12 semester hours of biology; 6 semester hours of chemistry recommended.
- 3301. Evolutionary Theory.** 3(3-0)
A study of Darwinism, mechanisms of evolutionary change and a history of life in the context of contemporary biology. Prerequisite: 12 semester hours of biology.
- 3375. Economic Entomology.** 3(3-0)
The characteristics, life history and identification of insects important to man, with particular reference to agriculture. Stress will be on control measures for harmful species. Prerequisite: 12 semester hours of biology.

- 3401. Invertebrate Zoology.** 4(3-3)
Classification, anatomy, life history and evolution of invertebrates exclusive of insects. Prerequisite: 12 semester hours of biology.
- 3402. Genetics.** 4(3-3)
Fundamental concepts of heredity, including cell reproduction, transmission genetics, biochemistry of genetics, gene structure and function and genetics of population. Lecture and recitation meetings. Prerequisites: 12 semester hours of biology; 6 semester hours of chemistry recommended.
- 3403. Plant Taxonomy.** 4(3-3)
An introductory course concerned with developing skill in recognition and identification of seed plants at the species and family levels. Emphasis will be placed on collection, use of keys and manuals and herbarium techniques. Prerequisite: 12 semester hours of biology.
- 3405. Vertebrate Zoology.** 4(3-3)
Anatomy, classification and natural history of the vertebrates; methods of collecting, preserving and identifying local vertebrates. Prerequisite: 12 semester hours of biology.
- 3407. Ecology.** 4(3-3)
Ecology of water and land forms of South Texas. Prerequisite: 12 semester hours of biology.
- 3408. Animal Physiology.** 4(3-3)
A study of the fundamental process of the animal systems. Prerequisites: 12 semester hours of biology and 6 semester hours of chemistry.
- 3409. Field Biology I.** 4(20-20)
A study of the ecology and conservation of southern Texas flora and fauna. Prerequisite: 6 semester hours of biology.
- 4102. Seminar.** 1(1-0)
Current biological literature with critical class reports. Course may be repeated for credit. Prerequisite: 12 semester hours of biology. Assessment Exam Fee, \$21.
- 4304. Research Projects in Biology.** V:1-3
An independent review of literature and a laboratory or field problem yielding a formal report on the research. Variable credit dependent upon the project. May be repeated not to exceed accumulated total of 3 semester hours applicable to requirements for the major in biology. Prerequisite: advanced standing and prior approval of the problem by the supervising instructor.
- 4355. Topics in Biology.** 3(3-0)
Lectures in selected topics. May be repeated for credit once under a different topic. Prerequisite: 12 semester hours of biology or equivalent.
- 4401. Molecular Biology.** 4(3-3)
The application of modern molecular techniques to manipulate the replication and expression of genes. The laboratory will introduce basic and advanced molecular techniques. Prerequisites: 12 semester hours of biology and BIOL 3402.
- 4402. Vertebrate Embryology.** 4(3-3)
Embryonic development of the frog, chick and pig. Prerequisite: 12 semester hours of biology.
- 4406. Bacteriology.** 4(3-3)
Survey of medical, public health, water, sewage and milk bacteriology. Bacteriological technique is emphasized. Prerequisites: 12 semester hours of biology, including BIOL 2421; 6 semester hours of chemistry recommended.

4408. Immunology. 4(3-3)
Experimental studies in the principles of infection and immunity. Prerequisite: 12 semester hours of biology, including BIOL 4406; organic chemistry recommended.

4410. Topics in Biology. 4(3-3)
Lectures, literature investigation and research in selected topics. May be repeated for credit once under different topic. Prerequisite: 12 semester hours of biology or equivalent.

4411. Plant Physiology. 4(3-3)
The study of the physiological functions of vascular plants including water relations, photosynthesis, respiration, hormone synthesis. Prerequisites: 12 hours of biology including BIOL 1307/BIOL 1107.

4413. Non-flowering Plants. 4(3-3)
The study of structure, physiological function, life cycles and the economical and biological importance of algae, bryophytes, lichens, ferns and gymnosperms. Prerequisites: 12 hours of biology including BIOL 1307/BIOL 1107.

4425. Ornithology. 4(3-3)
Classification, structures, physiology, natural history and field identification of birds. Prerequisite: 12 semester hours of biology.

4426. Cellular Physiology. 4(3-3)
Physiochemical function at the cellular level. Prerequisites: 12 semester hours of biology and CHEM 3323/3123, CHEM 3325/3125; PHYS 1301/1101 and PHYS 1302/1102 recommended.

4427. Herpetology. 4(3-3)
Classification, anatomy, life history and distribution of reptiles and amphibians with special emphasis on local forms. Prerequisite: 12 semester hours of biology.

4429. Mammalogy. 4(3-3)
Classification, distribution, life histories, economic importance, techniques of field study, methods of collection and preservation of mammals. Prerequisite: 12 semester hours of biology.

4430. Parasitology. 4(3-3)
Introduction to parasitism with special reference to human and other vertebrate hosts. Prerequisite: 12 semester hours of biology.

4431. Ichthyology. 4(3-3)
Classification, anatomy, life history and distribution of fishes, with special emphasis on local fresh water forms. Prerequisite: 12 semester hours of biology.

COMMUNICATION SCIENCES AND DISORDERS (CSDO)

Communication Disorders Clinic
Manning Hall 108. MSC 177A. Extension 3493

A Master's Degree in communication disorders is required in order to be a licensed speech-language pathologist in the State of Texas. An overall grade point average of 2.75, a grade point average of 3.0 in all CSDO courses, adequate written and oral communication skills (see CSDO 4223) and a passing grade on the CSDO exit exam prior to graduation are required so as to prepare the student for acceptance into a master's program. Students with less than a 3.0 grade point average must petition the CSDO faculty before enrollment in any subsequent class will be permitted.

2325. Phonetics. 3(3-0)
Training in the use of the International Phonetic Alphabet and practice in the transcription of normal and disordered speech.

3122. Clinical Observation in Speech Pathology and Audiology. 1(0-2)
Observation of clinical practice in speech pathology and audiology. Satisfactory completion required before the student can begin clinical practice. May be repeated for a total of 2 semester hours. Prerequisite: grade of C in, or concurrent registration in, CSDO 3305. Credit/Non-credit.

3305. Introduction to Communication Disorders. 3(3-0)
Cause, diagnosis and therapies of communication defects. Observation (CSDO majors: 25 hours; nonmajors: 15 hours) of speech and language therapy conducted in CSDO clinic each afternoon.

3313. Introduction to Audiology. 3(3-1.5)
Basic audiological concepts and their applicability to instrumentation and educational procedures utilized in the habilitation and/or rehabilitation of the pre-school and school aged child. Prerequisite: CSDO 3321; GPA 2.75 overall, 3.0 GPA in CSDO courses.

3321. Anatomy of the Auditory and Vocal Mechanisms. 3(3-0)
Designed to acquaint the student with the physiology and functions of the vocal and auditory mechanisms. Prerequisite: CSDO 3305; GPA 2.75 overall, 3.0 GPA in CSDO courses.

3325. Clinical Methodologies. (3-1.5)
Designed to acquaint the student with clinical methods in speech-language pathology before beginning clinical practice. Topics include target behaviors, treatment methods and controlling and maintaining target behaviors. Prerequisites: CSDO 2325 and CSDO 3305; GPA 2.75 overall, 3.0 GPA in CSDO courses.

4223. Clinical Practice in Speech/Language Pathology. 2(0-4)
Administration of speech/language therapy and diagnostic evaluation under direct supervision. May be repeated once. Attendance required at weekly clinical conference. Prerequisites: CSDO 3325 (may also be taken concurrently), CSDO 4321 and CSDO 4333; an overall grade point average of 3.0; a grade point average of 3.0 in all CSDO courses; successful completion of the departmental communication skills examination; and senior standing in CSDO.

4321. Articulatory and Phonological Disorders. 3(3-0)
In-depth study of the development of speech sounds, etiologies of articulation and phonological disorders, assessment, procedures and therapeutic approaches for working with individuals with articulation disorders. Demonstration and simulated practice will be provided in class. Prerequisites: CSDO 2325 and CSDO 3305; GPA 2.75 overall, 3.0 GPA in CSDO courses.

4327. Diagnostics in Speech/Language Pathology. 3(3-0)
Course will provide the student with information to demonstrate an understanding of the diagnostic process in the area of Communication Disorders. Knowledge of test protocols and assessment methods in language, articulation, voice and stuttering disorders. Prerequisites: CSDO 3305, CSDO 4321 and CSDO 4333; GPA 2.75 overall, 3.0 GPA in CSDO courses.

4329. Voice and Fluency Disorders. 3(3-0)
Lecture will consist of specific knowledge regarding the symptoms and etiologies of voice and fluency disorders. A basic knowledge of diagnostic and therapeutic procedures will also be obtained. Prerequisites: CSDO 3305 and CSDO 3321; GPA 2.75 overall, 3.0 GPA in CSDO courses.

4331. Speech and Hearing Science. 3(3-0)
Physical properties of sound, sound measurement, basic auditory function, acoustic and physiological phonetics and the perception of speech. Prerequisite: CSDO 3321; GPA 2.75 overall, 3.0 GPA in CSDO courses.

4333. Normal Language Acquisition. 3(3-0)
Symbolic system used by humans to communicate; role of learning in perception, comprehension and expression of linguistic codes; sequential development of normal language skills. Prerequisite: CSDO 3305 or permission of instructor; GPA 2.75 overall, 3.0 GPA in CSDO courses.

4335. Communication Disorders in Children. 3(3-0)
Interventions (principles and methods) for developmentally delayed or disordered language; specific procedures for planning and implementation of therapy. Prerequisites: GPA 2.75 overall, 3.0 GPA in CSDO courses.

4336. Communication Disorders in Adults.

3(3-0)

The study of adult disordered communicative processes. Consideration is given to signs and symptoms, etiology, clinical course and vocational-social impact of these disorders. Principles of assessment and intervention are highlighted. Prerequisites: CSDO 2325, CSDO 3305 and CSDO 3321; GPA 2.75 overall, 3.0 GPA in CSDO courses.

**Degree Requirements
Bachelor of Arts
Biology***

| | | | | | | | |
|-------------------------------|----------|--------------------------------|----------|--------------------|----------|----------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | BIOL 1307/1107 | 4 | BIOL 3402 | 4 | BIOL 3301 | 3 |
| BIOL 1306/1106 | 4 | CHEM 1312/1112 | 4 | BIOL 3407 | 4 | BIOL 3408, BIOL 4411 | 4 |
| CHEM 1311/1111 | 4 | ENGL 1302 | 3 | CHEM 3323/3123 | 4 | or BIOL 4426 | |
| ENGL 1301 | 3 | HIST 1302 | 3 | Foreign language | <u>3</u> | CHEM 3325/3125 | 4 |
| HIST 1301 | <u>3</u> | <i>^Social/behavioral</i> | <u>3</u> | | 15 | Foreign language | <u>3</u> |
| | 16 | | 17 | | | | 14 |
| Sophomore Year | | | | Senior Year | | | |
| BIOL 2421 | 4 | POLS 2302 | 3 | BIOL 4102 | 1 | BIOL, adv. | 4 |
| MATH 1316 | 3 | <i>^Global learning</i> | 3 | BIOL, adv. | 8 | Elective, adv. | 3 |
| POLS 2301 | 3 | <i>^Oral communication</i> | 3 | Minor | <u>5</u> | Minor, adv. | <u>6</u> |
| <i>^Literature/philosophy</i> | 3 | <i>^Visual/performing arts</i> | 3 | | 14 | | 13 |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | | | | |
| | 16 | | 15 | | | | |

Total Hours Req'd: 120

*Students must earn a letter grade of C or better in ENGL 1302 to demonstrate writing proficiency.
Note: Choice of minor will result in some variation in course sequence and total hours on the degree.
Consult departmental chair for information on minor programs.

**Degree Requirements
Bachelor of Science
Biology***

| | | | | | | | |
|----------------------------|----------|--------------------------------|----------|-----------------------|----------|-------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | BIOL 1307/1107 | 4 | BIOL 3402 | 4 | BIOL 3301 | 3 |
| BIOL 1306/1106 | 4 | CHEM 1312/1112 | 4 | BIOL 3408, BIOL 4411, | 4 | BIOL 3407 | 4 |
| CHEM 1311/1111 | 4 | ENGL 1302 | 3 | or BIOL 4426 | | CHEM 3325/3125 | 4 |
| ENGL 1301 | 3 | MATH 1316 | 3 | CHEM 3323/3123 | <u>4</u> | <i>^Literature/philosophy</i> | <u>3</u> |
| HIST 1301 | <u>3</u> | HIST 1302 | <u>3</u> | | 12 | | 14 |
| | 16 | | 17 | | | | |
| Sophomore Year | | | | Senior Year | | | |
| BIOL 2421 | 4 | POLS 2302 | 3 | BIOL 4102 | 1 | BIOL, adv. | 4 |
| PHYS 1301/1101 | 4 | PHYS 1302/1102 | 4 | STAT 4301 or | 3 | Electives | 4 |
| POLS 2301 | 3 | <i>^Global learning</i> | 3 | STAT 4303 | | Elective, adv. | 3 |
| <i>^Oral communication</i> | <u>3</u> | <i>^Social/behavioral</i> | 3 | BIOL, adv. | 8 | Minor, adv., or | <u>4</u> |
| | 14 | <i>^Visual/performing arts</i> | <u>3</u> | Minor, adv. | <u>4</u> | Any Elective | 15 |
| | | | 16 | | 16 | | |

Total Hours Req'd: 120

*Students must earn a letter grade of C or better in ENGL 1302 to demonstrate writing proficiency.
Note: Choice of minor will result in some variation in course sequence and total hours on the degree.
Consult departmental chair for information on minor programs.

^For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

**Degree Requirements
Bachelor of Science
Biology with Teaching Certification**

| | | | | | | | |
|------------------------------------|----------|------------------------------------|----------|--------------------|----------|-----------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | BIOL 1307/1107 | 4 | BIOL 3402 | 4 | BIOL 3301 | 3 |
| BIOL 1306/1106 | 4 | CHEM 1312/1112 | 4 | BIOL 3407 | 4 | BIOL 3408 | 4 |
| CHEM 1311/1111 | 4 | ENGL 1302 | 3 | CHEM 3323/3123 | 4 | BIOL 4102 | 1 |
| COMS 1311 | 3 | HIST 1301 | 3 | EDED 3310 | <u>3</u> | EDED 3302 | 3 |
| ENGL 1301 | <u>3</u> | MATH 1316 | <u>3</u> | | 15 | EDED 3333 | 3 |
| | 16 | | 17 | | | BIOL, adv. | <u>4</u> |
| | | | | | | | 18 |
| Sophomore Year | | | | Senior Year | | | |
| HIST 1302 | 3 | PHYS 1302/1102 | 4 | EDED 3332 | 3 | EDED 4623 | 6 |
| PHYS 1301/1101 | 4 | or PHYS 1407 | | EDED 3362 | 3 | EDRG 4314 | 3 |
| POLS 2301 | 3 | POLS 2301 | 3 | BIOL, adv. | <u>8</u> | EDSE 4391 | <u>3</u> |
| [^] Global learning | 3 | SOCI 2361 | 3 | | 14 | | 12 |
| [^] Literature/philosophy | <u>3</u> | STAT 1342 | 3 | | | | |
| | 16 | [^] Visual/performing art | <u>3</u> | | | | |
| | | | 16 | | | | |
| | | | | | | Total Hours Reqd: 124 | |

**Degree Requirements
Bachelor of Science
Biomedical Sciences***

| | | | | | | | |
|---------------------------------|----------|-------------------------------------|----------|----------------------|----------|------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | BIOL 1307/1107 | 4 | BIOL 3402 | 4 | BIOL 4401 | 4 |
| BIOL 1306/1106 | 4 | CHEM 1312/1112 | 4 | BIOL 3408 | 4 | CHEM 3325/3125 | 4 |
| CHEM 1311/1111 | 4 | ENGL 1302 | 3 | CHEM 3323/3123 | 4 | STAT 4301 | 3 |
| ENGL 1301 | 3 | [^] Social/behavioral | 3 | HIST 1302 | <u>3</u> | [^] Global learning | <u>3</u> |
| MATH 2413 | <u>4</u> | [^] Visual/performing arts | <u>3</u> | | 15 | | 14 |
| | 17 | | 17 | | | | |
| Sophomore Year | | | | Senior Year | | | |
| BIOL 2421 | 4 | HIST 1301 | 3 | BIOL 4355 | 3 | BIOL 4426 | 4 |
| PHYS 1301/1101 | 4 | PHYS 1302/1102 | 4 | BIOL, adv.* | 3 | BIOL, adv. | 3 |
| POLS 2301 | 3 | POLS 2302 | 3 | Free Electives, adv. | 3 | Free Electives | 5 |
| [^] Oral communication | <u>3</u> | [^] Literature/philosophy | 3 | Minor, adv.** | <u>3</u> | Minor, adv.** | <u>3</u> |
| | 14 | Minor/free Elective | <u>3</u> | | 12 | | 15 |
| | | | 16 | | | | |
| | | | | | | Total Hrs Reqd: 120 | |

*Student pursuing the pre-professional option may choose from any approved biology electives. Students pursuing the research track are required to enroll once in BIOL 4304. All other advanced biology electives for the research track may be chosen from any approved biology electives.

**Student pursuing the pre-professional option may choose from approved minor electives in any suitable field. Students pursuing the research track are required to minor in Chemistry and are required to take CHEM 4341/CHEM 4342.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this catalog.

**Degree Requirements
Bachelor of Science
Communication Sciences and Disorders
Minor in Psychology**

| | | | | | | | |
|---------------------------------------|----------|------------------------------|------------|--------------------|----------|--------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | ARTS 2301 | 3 | CSDO 3321 | 3 | CSDO 3313 | 3 |
| COMS 1311/ COMS 1315/ COMS 2335 | 3 | ENGL 1302 | 3 | CSDO 4321 | 3 | CSDO 3325 | 3 |
| ENGL 1301 | 3 | HIST 1302 | 3 | CSDO 4333 | 3 | CSDO 4335 | 3 |
| HIST 1301 | 3 | PSYC 2301 | 3 | Elective | 3 | PSYC, adv. | <u>3</u> |
| [^] Mathematics | 3 | *Science | <u>3-4</u> | PSYC, adv. | <u>3</u> | | 12 |
| *Science | <u>4</u> | | 15 | | 15 | | |
| | 18 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| CSDO 3305 | 3 | CSDO 2325 | 3 | CSDO 4327 | 3 | CSDO 4329 | 3 |
| ENGL 2314 | 3 | POLS 2302 | 3 | CSDO 4331 | 3 | CSDO 4336 | 3 |
| POLS 2301 | 3 | [^] Global learning | 3 | PSYC 3381 | 3 | Elective | 3 |
| PSYC | <u>6</u> | PSYC Elective | 3 | Elective | <u>6</u> | ** Electives, adv. | <u>6</u> |
| | 15 | Sophomore English | <u>3</u> | | 15 | | 15 |
| | | | 15 | | | | |

Total Hours Req'd: 120

*Students will choose one Biology from BIOL 1306/BIOL 1106 or BIOL 2401; and CHEM 1405 or PHYS 1375 or PHYS 1471.

**Consider CSDO 4223 and ENGL 4310 as electives.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this catalog.

DEPARTMENT OF CHEMISTRY (CHEM)

Greg Moehring, *Chair*

Nierman Science Hall 100. MSC 161. Extension 2914.

Professors

Castro, Moehring

Associate Professors

Bashir, Beller, Bhattacharya, Gonzalez-Garcia, Hays

Assistant Professors

Chi, Liu

Lecturer

Martino

Faculty Emeritus

Ruhnke

The aim of the department is to provide certain service courses for other departments whose subject matter is based, in part, on the fundamentals of chemistry; a cultural background for those who are interested in science and desire the B.S. or B.A. degree but do not expect to become professional chemists; and proper education for those who wish to become professional chemists. The B.S. degree is certified by the American Chemical Society. The M.S. degree in Chemistry is also offered.

The department has a communication skills requirement for graduation. Students must contact their department for communication skills requirement.

1111. General Inorganic Chemistry Laboratory I. (CHEM 1111) 1(0-3-1)

A laboratory experience that focuses on laboratory techniques, data collection and analysis. The experience reinforces and promotes an understanding of the principles of stoichiometry, gases, liquids, solutions and energy. One hour of recitation. Pre- or corequisite: CHEM 1311.

1112. General Inorganic Chemistry Laboratory II. (CHEM 1112) 1(0-3-1)

A laboratory experience that focuses on laboratory techniques, data collection and analysis. The experience reinforces and promotes an understanding of the principles of stoichiometry, gases, liquids, solutions and energy. One hour of recitation. Prerequisite: CHEM 1311 and CHEM 1111; Pre- or corequisite: CHEM 1312.

1311. General Inorganic Chemistry I. (CHEM 1311) 3(3-0)

The first course for students majoring in a field of science, engineering or agriculture. Principles of stoichiometry, thermochemistry, atomic and molecular structures, gases, liquids, solids and solutions and the chemistry of the elements and their compounds. Prerequisite: MATH 1314 and either one year of high school chemistry or CHEM 1481.

1312. General Inorganic Chemistry II. (CHEM 1312) 3(3-0)

The second course for students majoring in a field of science, engineering or agriculture. Principles of chemical kinetics, chemical equilibrium, thermodynamics, electrochemistry and the chemistry of the elements and their compounds. Prerequisites: CHEM 1111 and CHEM 1311.

1376. Elementary Chemistry. 3(3-2)

A survey of fundamental concepts of chemistry. Topics include atomic structure, elements and the periodic table, nuclear chemistry, acids and bases and organic, inorganic and biochemical compounds. Prerequisite: PHYS 1375.

1405. General Introduction to Chemistry. (CHEM 1405) 4(3-2)

Elementary studies in chemistry for those students not majoring in science. Emphasizes body chemistry and physiological action of drugs, foods, nutrients, poisons, cancer-causing agents, etc. Includes environmental, social, political, historical and agricultural aspects of the science.

1407. General Introduction to Chemistry. (CHEM 1407) 4(3-2)

The second course in elementary studies for those students not majoring in science. Emphasizes body chemistry and physiological action of drugs, foods, nutrients, poisons, cancer-causing agents, etc. Includes environmental, social, political, historical and agricultural aspects of the science.

- 1481. Elementary Principles of Chemistry.** 4(3-2)
A course for students who must take CHEM 1311, but whose background does not include a satisfactory command of mathematics or chemistry as determined by placement examinations. May not be counted as part of the general science requirements for a major or minor in chemistry.
- 2401. Inorganic Quantitative Analysis.** (CHEM 2401) 4(3-4)
Principles and methods of separation and analysis. Includes standard volumetric and gravimetric methods and an introduction to instrumental methods. Prerequisites: CHEM 1112 and CHEM 1312.
- 2421. Elementary Organic Chemistry.** 4(3-3)
Aliphatic and aromatic compounds with a special emphasis given to aliphatic compounds. Prerequisite: CHEM 1112 and CHEM 1312.
- 3123. Organic Chemistry Laboratory I.** 1(0-4)
Introduction to laboratory practices and procedures in organic chemistry, with emphasis on hydrocarbon chemistry. Pre- or corequisite: CHEM 3323.
- 3125. Organic Chemistry Laboratory II.** 1(0-4)
Introduction to laboratory practices and procedures in organic chemistry, with emphasis on hydrocarbon chemistry. Pre- or corequisite: CHEM 3325.
- 3181. Chemical Literature.** 1(1-0)
Prerequisite: at least 3 semesters of chemistry.
- 3323. Organic Chemistry I.** 3(3-0)
Introduction to the important concepts and principles in the bonding and reactions of organic molecules, with intensive study of the chemistry of non-aromatic hydrocarbons. Prerequisites: CHEM 1312, CHEM 1112. To count for a major or minor in Chemistry, CHEM 3123 must also be taken.
- 3325. Organic Chemistry II.** 3(3-0)
Continuation of CHEM 3323. An intensive study of the reactions and mechanisms of aromatic hydrocarbons and the main non-hydrocarbon functional groups. Prerequisites: CHEM 3323, CHEM 3123. To count for a major or minor in Chemistry, CHEM 3125 must also be taken.
- 3331-3332. Physical Chemistry.** 6(3-0)
A fundamental approach to the study of physical and chemical phenomena, including the study of thermodynamics, chemical kinetics, phase equilibria, electrochemistry, molecular structure and quantum mechanics. Required of all chemistry and chemical engineering majors. Prerequisite: one year each of physics and calculus.
- 3451. Environmental Chemistry.** 4(3-3)
Sources and causes of land, water and air pollution; the methods of measurement and abatement. May not be counted as part of the minimum requirements for a major in chemistry. Prerequisites: CHEM 1112, CHEM 1312 and two additional 3- or 4-credit hour courses in either biology or geology or more advanced chemistry.
- 4131-4132. Physical Chemical Measurements.** 2(0-4)
A laboratory course on the techniques and apparatus used in the measurement of properties of chemical systems. Attention is also given to the limits of accuracy and the sources of error in a given technique. Required of chemistry majors. Prerequisite: CHEM 2401. Prerequisite or corequisite: CHEM 3331, CHEM 3332.
- 4141. Biochemistry Laboratory.** 1(1-3)
An introduction to the biochemical techniques (methods used for protein purification, for protein characterization and for analysis of other important biomolecules). Prerequisite: CHEM 4341.
- 4181. Chemical Seminar.** 1(1-0)
Prerequisites: at least 6 semesters of Chemistry and CHEM 3181.

- 4311. Advanced Inorganic Chemistry.** 3(3-0)
Prerequisite: at least 6 semesters of chemistry including CHEM 2401 and Physical Chemistry.
- 4341. Biochemistry I.** 3(3-0)
Introduction to the important concepts, nomenclature and compounds of biochemistry with special emphasis on the chemical interpretation of the structures and functions of biological macromolecules. Credit may not be obtained in both CHEM 4341 and CHEM 4345. Prerequisite: CHEM 3325.
- 4342. Biochemistry II.** 3(3-0)
An introduction to the major biochemical cycles and pathways in living organisms, including reaction steps, regulation and mechanisms. Prerequisite: CHEM 4341.
- 4345. Principles of Biochemistry.** 3(3-0)
A one-semester presentation of the major areas of biochemistry, emphasizing the structure and function of biomolecules and major metabolic activities of living organisms, including humans. Credit may not be obtained in both CHEM 4341 and CHEM 4345. Prerequisites: CHEM 2421 or CHEM 3325.
- 4381. Selected Topics in Chemistry.** V:1-3
Literature and research in areas of chemistry not otherwise treated in depth in available courses. May be repeated when topic changes for a maximum of 6 semester hours of credit.
- 4385. Senior Research.** V:1-3
Supervised individual journal-quality research involving advanced chemical concepts and a variety of experimental techniques and instruments. May be taken for a maximum of 6 semester hours. Prerequisites: physical chemistry, senior standing and prior approval of the project director.
- 4401. Modern Methods of Instrumental Analysis.** 4(3-4)
Introduction to the theory and practice of optical and electro-analytical methods of analysis. Prerequisites: CHEM 2401 or CHEM 2371 and CHEM 3331 and CHEM 3332.
- 4421. Advanced Chemical Synthesis.** 4(2-6)
Introduction to advanced and sophisticated synthesis of organic, biochemical and inorganic compounds. Laboratory includes multi-step syntheses, stereochemical problems, literature-searching techniques, etc. Prerequisites: CHEM 3323/3123, CHEM 3325/3125.

Degree Requirements
Bachelor of Arts
Chemistry with Teaching Certification*

| | | | | | | | |
|-------------------------------------|----------|--|----------|--|----------|------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | CHEM 1312/1112 | 4 | CHEM 3331 | 3 | CHEM 3332 | 3 |
| CHEM 1311/1111 | 4 | ENGL 1302 | 3 | CHEM 4131 | 1 | CHEM 4132 | 1 |
| ENGL 1301 | 3 | MATH 2413 | 4 | HIST 1302 | 3 | EDED 3302 | 3 |
| MATH 2312 | 3 | POLS 2301 | 3 | [^] <i>Social/behavioral</i> | 3 | EDED 3310 | 3 |
| Foreign language (1 st) | <u>3</u> | Foreign language (2 nd) | <u>3</u> | [^] <i>Visual/performing arts</i> | 3 | EDED 3333 | 3 |
| | 15 | | 17 | Foreign language (3 rd) | <u>3</u> | Foreign language (4th) | <u>3</u> |
| | | | | | 16 | | 16 |
| Sophomore Year | | | | Senior Year | | | |
| CHEM 2401 | 4 | CHEM 3325/3125 | 4 | EDED 3332 | 3 | EDED 4623 | 6 |
| CHEM 3323/3123 | 4 | HIST 1301 | 3 | EDED 3362 | 3 | EDRG 4314 | <u>3</u> |
| MATH 2414 | 4 | PHYS 1302/1102 | 4 | EDSE 4391 | 3 | | 9 |
| PHYS 1301/1101 | <u>4</u> | POLS 2302 | 3 | CHEM, adv.** | 5 | | |
| | 16 | [^] <i>Oral communication</i> | <u>3</u> | [^] <i>Global learning</i> | <u>3</u> | Total Hours Reqd: 123 | |
| | | | 17 | | 17 | | |

**An additional 9 hours of approved advanced chemistry courses would qualify a graduate for certification to the American Chemical Society as a chemist meeting the professional standards of that organization.

**Advanced Chemistry: approval of chair required.

Degree Requirements
Bachelor of Science
Chemistry
Certified by the American Chemical Society

| | | | | | | | |
|-----------------------|----------|--|----------|--|----------|------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | CHEM 1312/1112 | 4 | CHEM 2401 | 4 | CHEM 3332 | 3 |
| BIOL 1306 | 3 | ENGL 1302 | 3 | CHEM 3331 | 3 | CHEM 4342 | 3 |
| CHEM 1311/1111 | 4 | MATH 2413 | 4 | CHEM 4341 | 3 | HIST 1302 | 3 |
| ENGL 1301 | 3 | [^] <i>Oral communication</i> | <u>3</u> | HIST 1301 | 3 | CHEM, adv.* | 4 |
| MATH 1348 | <u>3</u> | | 14 | [^] <i>Global learning</i> | <u>3</u> | Minor | <u>3</u> |
| | 15 | | | | 16 | | 16 |
| Sophomore Year | | | | Senior Year | | | |
| CHEM 3323/3123 | 4 | CHEM 3181 | 1 | CHEM 4131 | 1 | CHEM 4132 | 1 |
| MATH 2414 | 4 | CHEM 3325/3125 | 4 | CHEM 4311 | 3 | CHEM 4181 | 1 |
| PHYS 2325/2125 | 4 | ENGL 2314 | 3 | CHEM 4381 | 1 | ENGL 2342 or | 3 |
| POLS 2301 | <u>3</u> | PHYS 2326/2126 | 4 | [^] <i>Social/behavioral</i> | 3 | ENGL 2362 | |
| | 15 | POLS 2302 | <u>3</u> | [^] <i>Visual/performing arts</i> | 3 | CHEM, adv.* | 4 |
| | | | 15 | Minor, adv. | <u>3</u> | Elective, adv.** | 3 |
| | | | | | 14 | Minor, adv. | <u>3</u> |
| | | | | | | | 15 |
| | | | | | | Total Hours Reqd: 120 | |

*Advanced CHEM is CHEM 4401 and CHEM 4421. These courses may be taken in either order.

**Advanced Elective: Approval of chair required.

This program qualifies a graduate for certification to the American Chemical Society as a chemist meeting the professional standards of that organization. Consult departmental chair for information on minor programs.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

DEPARTMENT OF COMMUNICATIONS AND THEATRE ARTS

Manuel C. Flores, Jr., *Chair*

Speech Building 174. MSC 178. Extension 3401.

Associate Professors

Faherty, Flores, Rowley

Assistant Professors

Ranson, Saltarelli

Lecturers

Fisher, Ramos, Roberts

Faculty Emeritus

Deacon

The department provides instruction for students studying in the fields of speech, journalism, radio/television and theatre arts. The department also provides instruction for students in education who have chosen teaching fields in journalism, speech or theatre arts. The department offers specialization on the elementary level for both speech and theatre arts.

Students majoring or minoring in the various areas of the department are expected to take advantage of the experience and training offered to them in the various activities sponsored by the university and the department. The student of journalism is expected to work with the student publication, *The South Texan*. Credit for this work can be received by registering for COMJ 2129. The student of speech is expected to register for COMS 1144 for a minimum of 3 semester hours of elective credit. The student of theatre arts is required to register for theatre practice or rehearsal and performance each semester enrolled, except while student teaching. The student is also required to participate in a theatre activity each semester while at the university. The student whose interests lie in radio/television is expected to participate in studio activities each semester with KTAI FM 91.1 or TAMUK TV-2.

All activities of the department are also open to members of the university who are not majoring or minoring in the department.

The department has a communication skills requirement for graduation. Students must contact their department for communication skills requirement.

Little Theatre and Jones Auditorium: Throughout the year the department presents a series of plays, including a summer musical (in cooperation with the Department of Music). The two theatres also host other presentations of a varied nature.

COMMUNICATION (COMM)

1307. Introduction to the Mass Media. (COMM 1307) 3(3-0)

Mass communication in modern society. Communication processes, legal consideration and social implications.

2309. Editing. (COMM 2309) 3(2-3)

Theory and practice in copyreading, proofreading, headline writing, page layout and design, picture editing and news staff supervision. Extensive practice with electronic copy processing systems. Prerequisite: COMM 2311.

2311. Newswriting. (COMM 2311) 3(2-3)

Theory and practice of newswriting and relationships with sources. Lectures and assignments covering news for print and electronic media. Discussions of journalistic ethics and other problems confronting reporters. Prerequisites: ENGL 1301, ENGL 1302.

3301. Reporting. 3(2-3)

Theory and practice in news gathering and writing; types and techniques of public affairs reporting. Lab assignments include coverage of university departments and activities, municipal and county government, schools and courts for *The South Texan*. Lab requires use of computers as editing terminals and data bases. Prerequisite: COMM 2309.

3308. Radio and Television News and Script Writing. 3(3-0)

Writing correctness, clarity and style in radio and television: includes collecting, writing and editing news, continuity, drama, address and commercial copy.

4306. Selected Topics in Communication. 3(3-0)
Literature and research in areas of communication. Includes such topics as international press, yearbook production, semantics and history of public address. May be repeated once for credit when topic varies. Prerequisite: 6 semester hours of communication, journalism and/or speech.

4317. Mass Media, the Public and the Law. 3(3-0)
Legal and ethical limitation and responsibilities of the mass media, relationship and interaction between broadcaster, governmental regulatory agencies and the public. Prerequisite: 6 semester hours of journalism and/or radio-television.

4391. Independent Study in Communication. V:1-3
Intensive work in a special area of the student's major or minor. A maximum of 6 semester hours of credit in independent study may be applied toward graduation. Prerequisite: 6 semester hours in communication, speech or journalism.

JOURNALISM (COMJ)

2129. Publications Laboratory. (COMM 2129) 1(0-2)
Practical experience in publications. The course may be repeated for a maximum of 6 semester hours of credit. Prerequisite: COMM 2311.

2427. Photojournalism. 4(3-2)
Basic techniques of film, exposure, development, flash, filters and printing and composition as they relate to press photography.

3304. Feature and Special Articles. 3(3-0)
Identifying and developing feature story ideas. Reporting and writing feature articles and arranging for appropriate pictures for publication in newspapers or periodicals. Emphasis on training students in identifying markets for nonfiction writing. Prerequisite: junior standing.

3321. Principles of Advertising. 3(3-0)
Advertising writing, layout, typography and art work. Advertising campaigns, selling, practice exercises and advertising work for publication.

4301. History of Journalism. 3(3-0)
Development of the newspaper in England and the United States with attention to the social, economic and political forces which brought about changes in journalistic techniques and in basic ideas as to newspaper functions. Study of the careers of noted journalists.

4302. Editorial Writing. 3(3-0)
Purpose and style of editorial comment. Editorial page editing. Prerequisite: junior standing.

4322. Public Relations. 3(3-0)
Principles of public relations and their application in business, industry, education, government, social agencies and other institutions; the media of public relations; research methods used in public relations; journalistic implications of the public relations process. Case studies and analysis. Practice in public relations planning and writing.

SPEECH (COMS)

1144. Forensic Lab. (SPCH 1144) 1(0-1)
Participation and training in forensic activities, such as debate, extemporaneous speaking, oral interpretation and oratory. May be repeated for a total of 6 semester hours. Required for those participating in intercollegiate competition.

1311. Introduction to Oral Communication. (SPCH 1311) 3(3-0)
Theory and practice of speech communication in interpersonal, small group and public speaking.

1313. Principles of Speech. 3(3-0)
Theory and practice of choral speaking, oral reading of children's poetry and prose, creative drama, public speaking and small group discussion with children. Recommended for future elementary teachers.

- 1315. Business and Professional Communication.** (SPCH 1321) 3(3-0)
Theories and skills of speech communication as applied to business and professional situations.
- 1336. Introduction to Television Production.** (COMM 1336) 3(2-3)
The techniques of TV program production and procedures involved. Student participation in videotaped productions from the studio and remote locations.
- 2118. Radio Control Room Operations.** 1(1-0)
Practical experience in campus radio broadcasting activities. May be repeated for a total of 6 semester hours. Prerequisite: 3 semester hours of radio or television.
- 2301. Audio Production.** 3(3-0)
Survey of the techniques and equipment of audio production. Topics will include the use of microphones, tape machines and accessories. Both analog and digital processes will be covered.
- 2331. Radio Announcing and Production.** (COMM 2331) 3(2-3)
The principles of speech for radio and an analysis of the background and trends in broadcasting. An application of the principles for practical experience with emphasis on radio production.
- 2335. Discussion and Debate.** (SPCH 2335) 3(3-0)
Small group theories and techniques as they relate to group processes and interaction as well as the basic principles and practice of argumentation and debate. Prerequisite: COMS 1311 or high school experience.
- 2342. Voice, Phonetics and Diction.** (SPCH 1342) 3(3-0)
Voice production, the International Phonetic Alphabet and its application to the production of the sounds of American English. Required for majors.
- 2374. Professional Communication.** 3(3-0)
Communication skills for the professional. Writing of reports, letters, proposals, etc. Oral presentations in the form of group problem-solving, design reviews, requests for funding and/or public testimony/hearing. Use of presentation media to support oral communication. Prerequisite: ENGL 1302. Credit may not be obtained in both COMS 2374 and ENGL 2374.
- 3304. Advanced Oral Interpretation.** 3(3-0)
Analysis and practice of techniques in the oral interpretation of drama, poetry, prose, programmed readings, lecture recital and group interpretations. Prerequisite: 6 semester hours of speech.
- 3331. Persuasive Communication.** 3(3-0)
Theories and techniques of persuasive communication including the psychological, logical and ethical principles involved. Types of speaking and persuasion in the media will be studied. Required for speech concentration. Prerequisite: COMS 1311 or equivalent.
- 3337. Intermediate Television Production and Direction.** 3(2-4)
Expanded operation and theory of television equipment is utilized in the production and direction of programs for the local educational cable television system. Prerequisite: COMS 1336.
- 4316. Advanced Seminar in Speech Communication.** 3(3-0)
Advanced theory and practice in selected types of speech communication, debate and oral interpretation. Contest speaking, tournament management and communication evaluation. Prerequisite: 6 hours of Speech or Communication.
- 4331. Readings in Speech Communication and Theatre Arts.** 3(3-0)
Research in contemporary thought in speech communication and theatre arts. Prerequisites: COMS 1311, COMS 2335, COMS 2342. Credit may not be obtained in both COMS 4331 and THEA 4331.
- 4335. Advanced Studio and Remote Television Production.** 3(1-5)
Mastery of television equipment utilization both in the studio and field. Practical experience in electronic news gathering and electronic field production for educational cable television. Prerequisite: COMS 3337.

THEATRE ARTS (THEA)

- 1120. Theatre Practice I.** (DRAM 1120) 1(0-2)
Experience in the participation in and evaluation of rehearsal and performance activities related to departmental productions. Required for Theatre Arts majors and minors. May be repeated once.
- 1241. Makeup for the Stage.** (DRAM 1241) 2(1-3)
The theory and practice of stage makeup with emphasis on the latter.
- 1322. Acting I.** (DRAM 1351) 3(2-2)
Beginning concepts of the use of the voice and body in the creation of a character for the stage.
- 2301. Structure of the Arts.** 3(2-4)
Art, Music and Theatre Arts are combined in selected problems dealing with arts structure. Creative production is the result of studio activity and critique.
- 2330. Stagecraft.** (DRAM 1330) 3(2-3)
Introduction to stagecraft as it pertains to academic theatre. Scene shop and set construction skills. Basic concepts of drafting and design. Participation in stage work required. Prerequisite: THEA 1120.
- 3131. Rehearsal and Performance I.** 1(0-2)
Experience in acting and crew work in departmental productions. Required for Theatre Arts majors and minors. May be repeated once.
- 3132. Rehearsal and Performance II.** 1(0-2)
Experience in acting and crew work in departmental productions. Required for Theatre Arts majors and minors. May be repeated once.
- 3302. Women and the Arts.** 3(3-0)
Issues surrounding the participation of women in the arts. Selected women who have contributed to the visual and performing arts throughout history are studied in relation to the culture of their time and the principles related to the arts. No previous experience in theatre, art or music required. Prerequisite: completion of visual/performing arts component. Credit may be obtained in only one of ARTS 3302, MUSI 3302, THEA 3302 or WMST 3302.
- 3311. Advanced Problems in Scenography and Performance.** 3(2-3)
Consideration of topics such as scenery and lighting design, advanced problems of acting, costume history and construction. May be repeated once for credit when topic changes.
- 3330. Technical Theatre.** (DRAM 2331) 3(2-3)
Introduction to technical theatre as it pertains to academic theatre. Light hanging and focusing skills; use of light and sound boards; basic concepts of lighting and soundtrack design. Participation in stage work for department required. Prerequisite: THEA 2330.
- 3352. Acting II: Advanced Acting.** 3(2-2)
For students with a background in acting. Scenes from classical theatre, avant-garde theatre and other period and non-traditional genres. Prerequisite: THEA 1322.
- 4302. Play Direction.** 3(3-0)
Problems of selecting and producing the play, practice in directing the one-act play. Prerequisites: THEA 1241.
- 4308. Selected Topics in Theatre History and Criticism.** 3(3-0)
Studies of the major periods of theatre, such as Greek to Elizabethan, Elizabethan to modern and the development of theatrical criticism. May be repeated once as topic varies. Prerequisite: sophomore standing.
- 4331. Readings in Speech Communication and Theatre Arts.** 3(3-0)
Research in contemporary thought in speech communication and theatre arts. Prerequisites: COMS 1311, COMS 2335, COMS 2342. Credit may not be obtained in both COMS 4331 and THEA 4331.

4392. Independent Study in Theatre Arts.

V:1-3

Intensive work in a special area of the student's major or minor. A maximum of 6 semester hours of credit in individual study may be applied toward graduation.

**Degree Requirements
Bachelor of Arts
Communication-Journalism**

| | | | | | | | |
|--------------------------------------|----------|---------------------------------------|----------|--|----------|-----------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | COMM 2311 | 3 | COMJ 2129 | 1 | COMM 4317 | 3 |
| COMS 1307 | 3 | ENGL 1302 | 3 | COMJ 3304 | 3 | COMJ/COMM, adv. | 3 |
| ENGL 1301 | 3 | HIST 1302 | 3 | COMJ 4322 | 3 | Elective, adv. | 3 |
| HIST 1301 | 3 | [^] <i>Social/behavioral</i> | 3 | COMS 1311, | 3 | Minor | 3 |
| [^] <i>Mathematics</i> | 3 | Foreign language | <u>3</u> | COMS 1315 or | | Minor | <u>3</u> |
| Foreign language | <u>3</u> | | 15 | COMS 2335 | | | 15 |
| | 17 | | | [^] <i>Global learning</i> | 3 | | |
| | | | | [^] <i>Visual/performing arts</i> | <u>3</u> | | |
| | | | | | 16 | | |
| Sophomore Year | | | | Senior Year | | | |
| COMM 2309 | 3 | COMM 3301 | 3 | COMJ 4301 | 3 | COMM 4319 | 3 |
| ENGL 2342 or | 3 | ENGL 2342 or | 3 | COMM 4306 | 3 | Elective, adv. | 3 |
| ENGL 2362 | | ENGL 2362 | | Elective, adv. | 3 | Minor, adv. | 3 |
| POLS 2301 | 3 | POLS 2302 | 3 | Minor, adv. | 3 | Minor, adv. | <u>3</u> |
| [^] <i>Natural sciences</i> | 3 | [^] <i>Natural sciences</i> | 3 | Minor, adv. | <u>3</u> | | 12 |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | | 15 | | |
| | 15 | | 15 | | | | |

Total Hours Reqd: 120

**Degree Requirements
Bachelor of Arts
Communication-Speech**

| | | | | | | | |
|--------------------------------------|----------|--|----------|--------------------|----------|-----------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | ENGL 1302 | 3 | COMS 3331 | 3 | COMM/COMS, adv. | 3 |
| COMS 1311 | 3 | HIST 1302 | 3 | COMM/COMS | 3 | COMM/COMS, adv. | 3 |
| ENGL 1301 | 3 | [^] <i>Social/behavioral</i> | 3 | Elective, adv. | 3 | Elective, adv. | 3 |
| HIST 1301 | 3 | [^] <i>Visual/performing arts</i> | 3 | Elective, adv. | 3 | Minor | 3 |
| [^] <i>Mathematics</i> | 3 | Foreign language | <u>3</u> | Minor | <u>3</u> | Minor | <u>3</u> |
| Foreign language | <u>3</u> | | 15 | | 15 | | 15 |
| | 17 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| COMS 2342 | 3 | ENGL 2342 or | 3 | COMM/COMS, adv. | 3 | COMM/COMS, adv. | 3 |
| ENGL 2342 or | 3 | ENGL 2362 | | COMM/COMS, adv. | 3 | COMM/COMS, adv. | 3 |
| ENGL 2362 | | POLS 2302 | 3 | COMM/COMS, adv. | 3 | Elective, adv. | 3 |
| POLS 2301 | 3 | [^] <i>Global learning</i> | 3 | Elective | 1 | Minor, adv. | 3 |
| [^] <i>Natural sciences</i> | 3 | [^] <i>Natural sciences</i> | 3 | Minor, adv. | <u>3</u> | Minor, adv. | <u>3</u> |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | | 13 | | 15 |
| | 15 | | 15 | | | | |

Total Hours Reqd: 120

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

**Degree Requirements
Bachelor of Arts
Speech with Teaching Certification**

| | | | | | | | |
|-------------------------------------|----------|-------------------------------|----------|--------------------|----------|------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | COMS 1313 | 3 | COMS 2335 | 3 | COMS 3331 | 3 |
| COMS 1311 | 3 | COMS 2342 | 3 | COMS 3304 | 3 | EDED 3302 | 3 |
| ENGL 1301 | 3 | ENGL 1302 | 3 | EDED 3302 | 3 | EDED 3333 | 3 |
| HIST 1301 | 3 | HIST 1302 | 3 | COMS, adv. | 3 | COMS, adv. | 3 |
| [^] Mathematics | 3 | [^] Natural sciences | <u>3</u> | Foreign language | <u>3</u> | Foreign language | <u>3</u> |
| [^] Social/behavioral | <u>3</u> | | 15 | | 15 | | 15 |
| | 17 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 | 3 | COMM 1307 | 3 | COMS 4316 | 3 | EDED 4623 | 6 |
| POLS 2301 | 3 | ENGL 2362 | 3 | COMS 4331 | 3 | EDRG 4314 | 3 |
| [^] Natural sciences | 3 | POLS 2302 | 3 | EDED 3332 | 3 | EDSE 4391 | <u>3</u> |
| [^] Visual/performing arts | 3 | [^] Global learning | 3 | EDED 3362 | 3 | | 12 |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | COMS, adv. | 3 | | |
| | 15 | | 15 | Elective | <u>1</u> | | |
| | | | | | 16 | | |
| | | | | | | Total Hours Reqd: 120 | |

**Degree Requirements
Bachelor of Arts
Theatre Arts**

| | | | | | | | |
|--------------------------|----------|------------------|----------|--------------------------------|----------|------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | COMS 1311, | 3 | THEA 3131 | 1 | THEA 3132 | 1 |
| ENGL 1301 | 3 | COMS 1315 or | | THEA 3311 | 3 | Elective, adv. | 3 |
| HIST 1301 | 3 | COMS 2335 | | THEA 3352 | 3 | Minor | 3 |
| THEA 1120 | 1 | ENGL 1302 | 3 | [^] Global learning | 3 | Minor | 3 |
| THEA 1241 | 2 | HIST 1302 | 3 | [^] Social/behavioral | 3 | THEA, adv. | <u>3</u> |
| [^] Mathematics | 3 | THEA 1121 | 1 | Elective, adv. | <u>3</u> | | 13 |
| Foreign language | <u>3</u> | THEA 1322 | 3 | | 16 | | |
| | 17 | Foreign language | <u>3</u> | | | | |
| | | | 16 | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 or | 3 | ENGL 2342 or | 3 | THEA 3131 | 1 | ENGL 4331 or | 3 |
| ENGL 2362 | | ENGL 2362 | | THEA 4302 | 3 | ENGL 4384 | |
| POLS 2301 | 3 | POLS 2302 | 3 | Minor, adv. | 3 | THEA 3132 | 1 |
| THEA 2330 | 3 | THEA 3330 | 3 | Minor, adv. | 3 | THEA 4308 | 3 |
| Foreign language | 3 | Foreign language | 3 | THEA, adv. | <u>3</u> | Minor, adv. | 3 |
| *Science | <u>4</u> | *Science | <u>4</u> | | 13 | Minor, adv. | <u>3</u> |
| | 16 | | 16 | | | | 13 |
| | | | | | | | |
| | | | | | | Total Hours Reqd: 120 | |

34 hours in Theatre Arts/19 advanced; 18 hours minimum in minor field (art, communication, music, a Foreign language, a social science or other field approved by the department chair or 24 hours in English); 21 hours of electives to be approved by the adviser.

*Must be consecutive lab science.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

Degree Requirements
Bachelor of Arts
Theatre Arts with Teaching Certification

| | | | | | | | |
|-------------------------------------|----------|-------------------------------------|-----------|--------------------|-----------|-------------------------------|-----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | ENGL 1302 | 3 | EDED 3310 | 3 | EDED 3302 | 3 |
| COMS 1311/ | 3 | HIST 1302 | 3 | THEA 3131 | 1 | EDED 3333 | 3 |
| COMS 1315/ | | THEA 1120 | 1 | THEA 3311 | 3 | THEA 3132 | 1 |
| COMS 2335 | | ^ <i>Mathematics</i> | 3 | Minor | 3 | THEA 3330 | 3 |
| ENGL 1301 | 3 | ^ <i>Social/behavioral</i> | 3 | Minor | 3 | Minor, adv. | 3 |
| HIST 1301 | 3 | Foreign language (2 nd) | <u>3</u> | Minor, adv. | <u>3</u> | Minor, adv. | <u>3</u> |
| THEA 1120 | 1 | | <u>16</u> | | <u>16</u> | | <u>16</u> |
| Foreign language (1 st) | <u>3</u> | | | | | | |
| | 15 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 | 3 | ENGL 2362 | 3 | EDED 3332 | 3 | EDED 4623 | 6 |
| POLS 2301 | 3 | POLS 2302 | 3 | EDED 3362 | 3 | EDRG 4314 | 3 |
| THEA 1241 | 2 | THEA 2330 | 3 | THEA 3131 | 1 | EDSE 4391 | 3 |
| THEA 1322 | 3 | ^ <i>Global learning</i> | 3 | THEA 4302 | 3 | THEA 3132 | <u>1</u> |
| ^ <i>Natural sciences</i> | 3 | ^ <i>Natural sciences</i> | 3 | THEA 4308 | 3 | | 13 |
| Foreign language (3rd) | <u>3</u> | Foreign language (4th) | <u>3</u> | Minor, adv. | <u>3</u> | | |
| | 17 | | <u>18</u> | | <u>16</u> | | |
| | | | | | | Total Hours Req'd: 127 | |

^For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

DEPARTMENT OF HISTORY (HIST)

Brenda Melendy, *Chair*

Rhode Hall 302. MSC 166. Extension 3609.

Professors

Davis, Ferguson, Huebel, Melendy

Associate Professors

Baker, Houf, Knight, Tuller

Visiting Assistant Professors

Greenspan, Weber

Faculty Emeriti

Albro, Chandler, Hunter

A Bachelor of Arts degree in History prepares students for careers in law, education, government, business and the military and for study culminating in an advanced or professional degree.

A major in History requires completion of 33 semester hours in History, consisting of five required courses and six advanced elective courses.

A minor in History requires completion of 21 semester hours in History, consisting of four required courses and three advanced elective courses.

Students majoring or minoring in History must complete the introductory courses, HIST 1301-1302 and HIST 2321-2322. Students majoring in History are advised to complete HIST 4301 prior to or concurrently with their first upper-level elective course.

Upper-level courses are grouped into four areas of study: United States, Europe, Latin America and Non-western. Majors must take at least one upper-level course in each of three of these four areas of study. Majors must complete at least one 4000-level Crucial Topics course in which they will produce a significant research paper, which will serve as a senior thesis.

1301-1302. American History. (HIST 1301) (HIST 1302) 6(3-0)

A survey of the United States from the era of exploration to the present time. HIST 1301 extends through the period of Reconstruction (1877) and HIST 1302 includes the period following Reconstruction to the present.

2321-2322. The Development of World Civilization. (HIST 2321)(HIST 2322) 6(3-0)

The rise and fall of great world civilizations from pre-literary times to the present. Emphasis is on the political, religious, economic and cultural characteristics of these civilizations and their contributions to the contemporary world.

3324. History of Technology and Society. 3(3-0)

A historical study of the development of technology and the shaping of human societies. Prerequisites: 6 semester hours of History and 6 semester hours of Political Science.

4301. Methods of Historical Research. 3(3-0)

Procedures and methods of historical research. Introduction to types of historical data, the analysis of sources, the use of computer techniques in historical research and the methods of historical writing. Prerequisite: 6 semester hours of history.

4312. Europe in the Middle Ages. 3(3-0)

Political, economic and cultural developments in Europe from the fall of the Roman Empire to the Renaissance. Prerequisite: 12 semester hours of History and/or Political Science.

4316. Europe, 1815-1914. 3(3-0)

Political, social and economic developments in Europe from the Congress of Vienna to the outbreak of World War I with emphasis on the rise of liberalism, nationalism and imperialism. Prerequisite: 12 semester hours of History and/or Political Science.

- 4318. Europe Since 1914.** 3(3-0)
Political, social and economic developments in Europe from World War I to the present. Prerequisite: 12 semester hours of History and/or Political Science.
- 4332. American Controversy and Conflict, 1816 to 1850.** 3(3-0)
Major questions of the period; sectionalism, national rights versus states' rights, the slavery issue, expansion in the continental United States. Prerequisite: 12 semester hours of History and/or Political Science.
- 4334. The Civil War and Reconstruction.** 3(3-0)
Secession, formation of the Confederacy, military campaigns and Reconstruction. Prerequisite: 12 semester hours of History and/or Political Science.
- 4336. America's Rise to World Power.** 3(3-0)
Progressivism, World War I, the 1920s, the Great Depression and World War II. Prerequisite: 12 semester hours of History and/or Political Science.
- 4338. The United States Since 1945.** 3(3-0)
Post-war abundance, the Cold War, social and cultural changes, the Vietnam era and the post-Nixon years. Prerequisite: 12 semester hours of History and/or Political Science.
- 4340. United States Social and Cultural History.** 3(3-0)
The development of American society and culture with emphasis on religious trends, ethnic groups and the family. Prerequisite: 12 semester hours of History and/or Political Science.
- 4344. American Frontier.** 3(3-0)
The influence of successive frontiers upon American political, economic and social development from the earliest settlements to 1890. Prerequisite: 12 semester hours of History and/or Political Science.
- 4346. Texas History.** 3(3-0)
Spanish background, Anglo-American settlement, the Revolution and Republic and statehood; economic, cultural and political development. Prerequisite: 12 semester hours of History and/or Political Science.
- 4348. History of the Mexican-American in the Southwest.** 3(3-0)
A survey from the first Spanish settlers to the present. Prerequisite: 12 semester hours of History and/or Political Science.
- 4350. Latin America.** 3(3-0)
Historical background of contemporary Latin America. Prerequisite: 12 semester hours of History and/or Political Science.
- 4356. Mexico.** 3(3-0)
Political, economic and social history of Mexico from pre-Columbian times to the present. Emphasis on the last century. Prerequisite: 12 semester hours of History and/or Political Science.
- 4358. Asian History.** 3(3-0)
An introduction to political, social, cultural and economic Asian history from antiquity to the present. Emphasis on the study not only of important Asian leaders, cultures and societies, but also of the various religions and philosophies which originated in Asia. Prerequisite: 12 semester hours of History and/or Political Science.
- 4360. Women in History.** 3(3-0)
Investigation of the social, economic and political position of women from the Renaissance to contemporary America and a comparison of the ideal expounded by different historical epochs with woman's actual role in each society. Prerequisite: 12 semester hours of History and/or Political Science. Credit may not be obtained in both HIST 4360 or WMST 4360.
- 4370. Crucial Topics in European History.** 3(3-0)
Intensive seminar on a specialized topic in European history, culminating in the production of a significant research paper. May be repeated for credit as the topic changes. Prerequisite: 12 semester hours of History and/or Political Science.

4380. Crucial Topics in United States History. 3(3-0)
Intensive seminar on a specialized topic in United States history, culminating in the production of a significant research paper. May be repeated for credit as topic changes. Prerequisite: 12 semester hours of History and/or Political Science.

4392. Crucial Topics in Latin American History. 3(3-0)
Intensive seminar on a specialized topic in Latin American history, culminating in the production of a significant research paper. May be repeated for credit as the topic changes. Prerequisite: 12 semester hours of History and/or Political Science.

4396. Crucial Topics in Non-Western History. 3(3-0)
Intensive seminar on specialized topics in Non-Western history, culminating in the production of a significant research paper. May be repeated for credit as the topic changes. Prerequisite: 12 semester hours of History and/or Political Science.

**Degree Requirements
Bachelor of Arts
History**

| | | | | | | | |
|-------------------------------------|----------|-------------------------------------|----------|--------------------|----------|-------------------|-----|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | COMS 1311 | 3 | HIST 4301 | 3 | Elective, adv. | 3 |
| ENGL 1301 | 3 | ENGL 1302 | 3 | Elective, adv. | 3 | HIST, adv. | 6 |
| HIST 1301 | 3 | HIST 1302 | 3 | Electives | 4 | Minor | 6 |
| [^] Mathematics | 3 | [^] Social/behavioral | 3 | HIST, adv. | 3 | | 15 |
| Foreign language (1 st) | <u>3</u> | Foreign language (2nd) | <u>3</u> | Minor | <u>3</u> | | |
| | 14 | | 15 | | 16 | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2331 or | 3 | HIST 2322 | 3 | Electives, adv. | 9 | Elective, adv. | 3 |
| ENG 2342 or | | POLS 2302 | 3 | HIST, adv. | 3 | HIST, adv. | 6 |
| ENGL 2362 | | [^] Natural sciences | 3 | Minor | <u>3</u> | Minor, adv. | 6 |
| HIST 2321 | 3 | [^] Visual/performing arts | 3 | | 15 | | 15 |
| POLS 2301 | 3 | Foreign language (4 th) | <u>3</u> | | | | |
| [^] Natural sciences | 3 | | 15 | | | | |
| Foreign language (3rd) | <u>3</u> | | | | | | |
| | 15 | | | | | | |
| | | | | | | Total Hours Reqd: | 120 |

**Degree Requirements
Bachelor of Arts
History with Teaching Certification**

| | | | | | | | |
|-------------------------------|----------|-------------------------------------|----------|--------------------|----------|---------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | ENGL 1302 | 3 | EDED 3310 | 3 | EDED 3302 | 3 |
| ENGL 1301 | 3 | HIST 1302 | 3 | HIST 4301 | 3 | EDED 3333 | 3 |
| HIST 1301 | 3 | [^] Natural sciences | 3 | HIST 4346 | 3 | **HIST, adv. | 6 |
| MATH 1314 | 3 | [^] Visual/performing arts | 3 | **HIST, adv. | 3 | Minor | 3 |
| Foreign language (1st) | <u>3</u> | Foreign language (2nd) | <u>3</u> | Minor | <u>6</u> | Minor, adv. | <u>3</u> |
| | 14 | | 15 | | 18 | | 18 |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2331 | 3 | COMS 1311 | 3 | EDED 3332 | 3 | EDED 4623 | 6 |
| or ENGL 2342 | | HIST 2322 | 3 | EDED 3362 | 3 | EDRG 4314 | <u>3</u> |
| or ENGL 2362 | | POLS 2302 | 3 | EDSE 4391 | 3 | | 9 |
| HIST 2321 | 3 | [^] Social/behavioral | 3 | **HIST, adv. | 6 | | |
| POLS 2301 | 3 | Minor | 3 | Minor, adv. | <u>3</u> | | |
| [^] Natural sciences | 3 | Foreign language (4th) | <u>3</u> | | 18 | | |
| Foreign language (3rd) | <u>3</u> | | 18 | | | Minimum Hours Reqd: | 125 |
| | 15 | | | | | | |

Summer Session work may be advisable to reduce term loads.

*BIOL 2375, CHEM 1376 or PHYS 1375 suggested. Many alternatives require use of an elective hour each for an accompanying laboratory.

**Advanced History must be from approved listing for certification.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

Degree Requirements
Bachelor of Arts
History with Social Studies Teaching Certification

| | | | | | | | |
|-------------------------------------|----------|------------------------|----------|--------------------|----------|------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | COMS 1311 | 3 | EDED 3310 | 3 | EDED 3302 | 3 |
| ENGL 1301 | 3 | ENGL 1302 | 3 | GEOG 1303 | 3 | EDED 3333 | 3 |
| HIST 1301 | 3 | HIST 1302 | 3 | HIST 4301 | 3 | HIST 4346 | 3 |
| ^ <i>Mathematics</i> | 3 | POLS 2301 | 3 | POLS 2304 | 3 | *HIST, adv. | 6 |
| ^ <i>Visual/performing arts</i> | 3 | Foreign language (2nd) | <u>3</u> | *HIST, adv. | <u>6</u> | POLS, adv. | <u>3</u> |
| Foreign language (1 st) | <u>3</u> | | 15 | | 18 | | 18 |
| | 17 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ECON 2301 | 3 | ECON 2302 | 3 | EDED 3332 | 3 | EDED 4623 | 6 |
| ENGL 2331 or | 3 | GEOG 1302/1102 | 4 | EDED 3362 | 3 | EDRG 4314 | <u>3</u> |
| ENGL 2342 or | | HIST 2322 | 3 | EDSE 4391 | 3 | | 9 |
| ENGL 2362 | | POLS 2302 | 3 | GEOG 3305 or | 3 | | |
| GEOG 1301/1101 | 4 | Foreign language (4th) | <u>3</u> | GEOG 3331 | | | |
| HIST 2321 | 3 | | 16 | *HIST, adv. | 3 | Total Hours Reqd: 127 | |
| Foreign language (3rd) | <u>3</u> | | | POLS, adv. | <u>3</u> | | |
| | 16 | | | | 18 | | |

Summer Session work may be advisable to reduce term loads.
 *Advanced History must be from approved listing for certification.

^For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

DEPARTMENT OF LANGUAGE AND LITERATURE

Susan L. Roberson, *Chair*

Fore Hall 110. MSC 162. Extension 2516.

Regents Professors

Sabrio, Thomas

Professor

Roberson

Associate Professors

Downs, Johnson-Vela, Vela Cordova

Assistant Professors

Baker, Briones, Tucker, Watson

Lecturers

Acuff, Borse, Eyerman-Craft, Iniguez, Verderber, Worrall

Teaching Retiree

Mucchetti

Faculty Emeriti

Gunn, Herrick, Rhode, Smith

The department provides instruction in the fields of English, French and Spanish. It also provides the Writing minor.

Writing minor:

A Writing minor consists of 18 semester hours of writing courses beyond ENGL 1301, ENGL 1302, ENGL 2342 and ENGL 2361, 12 of which must be advanced. These must include 3 hours from ENGL 4310 or ENGL 4311; 6-9 hours from ENGL 2314 and ENGL 3300; and 6-9 hours from ENGL 4370 (with writing topic) and ENGL 4390. English majors may not count any course toward both major and minor requirements. *Note:* With approval of the Language and Literature Chair, 3 semester hours may be from writing courses offered in departments outside Language and Literature. *Consult with Language and Literature Chair for course selection.*

Special Notations for French and Spanish:

1. Students who have successfully completed a 2000- or 3000-level course in the same language with a grade of *C* or better may not take a less advanced course in the same language for credit.
2. Students who completed their secondary education in an institution where a foreign language was the principal language of instruction cannot enroll in elementary or intermediate courses in that language.
3. A maximum of 12 semester hours of college credit in first or second level for previously completed work in foreign languages may be allowed. Credit may be obtained in one of three ways: (1) by achieving an acceptable score in the CEEB Advanced Placement Examination (this examination must be taken prior to first registration at A&M-Kingsville; see "Credit by Advanced Placement Examination [CEEB]" for details); (2) by local examination (see "Credit by Local Examination" for details); or (3) by obtaining an acceptable score in the MLS Cooperative Foreign Language Test.
4. Students whose only contact with Spanish will be the classroom are advised to follow the sequence SPAN 1313, SPAN 1314, SPAN 2311, SPAN 2312. Students who possess a passive or spoken knowledge of Spanish are advised to follow the sequence SPAN 1373, SPAN 2301, SPAN 2302 and advanced Spanish. Students who place out of first semester Spanish by examination may also be approved to start with SPAN 1373.

ENGLISH (ENGL)

1301. Rhetoric and Composition. (ENGL 1301)

3(3-0)

Study of English grammar and usage and the principles of effective expository and argumentative writing; development of reading skills; analysis of short essays as models for writing. Required of all freshmen.

- 1302. Rhetoric and Composition.** (ENGL 1302) 3(3-0)
Continuation of ENGL 1301 with more exacting standards for writing skills and reading comprehension; analysis of short essays with an emphasis on argument, language and ideas. Includes research skills component. Required of all freshmen. Prerequisite: ENGL 1301.
- 2314. Technical Writing.** (ENGL 2314) 3(3-0)
Scientific writing style and technical methods of exposition: definition, description, process, analysis and interpretation. Prerequisites: ENGL 1301, ENGL 1302.
- 2331. Global Issues in Literature.** (ENGL 2331) 3(3-0)
Study of literature by world authors to reveal commonalities and diversity among cultures and global perspectives on ethics. Assignments focus on multiple cultures and allow further practice in writing and information literacy. Prerequisite: ENGL 1302.
- 2342. Readings in Poetry and Novel.** (ENGL 2322) 3(3-0)
Study of poems and novels by American, British and world authors emphasizing the characteristics of each genre and further refining writing skills. Prerequisites: ENGL 1301, ENGL 1302.
- 2362. Readings in Short Story and Drama.** (ENGL 2323) 3(3-0)
Study of short stories and plays by American, British and world authors emphasizing the characteristics of each genre and further refining writing skills. Prerequisites: ENGL 1301, ENGL 1302.
- 2374. Professional Communication.** 3(3-0)
Communication skills for the professional. Writing of reports, letters, proposals, etc. Oral presentations in the form of group problem-solving, design reviews, requests for funding and/or public testimony/hearing. Use of presentation media to support oral communication. Prerequisite: ENGL 1302. Credit may not be obtained in both ENGL 2374 and COMS 2374.
- 3300. Special Topics in Writing.** 3(3-0)
Practice and refinement of the writing process with emphasis on audience, purpose and form, paying attention to rhetorical invention, arrangement and style appropriate to the particular topic. May be repeated when a different topic is scheduled. Prerequisite: 3 semester hours of sophomore English or permission of instructor.
- 3373. Children's Literature.** 3(3-0)
Books for children from nursery school through middle school. Students participate in writing poetry, choral reading, book reviewing, storytelling and responding to books in a variety of ways. Prerequisite: 3 semester hours of sophomore English or permission of instructor.
- 3376. Mythology.** 3(3-0)
Greek and Roman mythology; epics of Western Europe, as background for the study of literature in the English language. Prerequisite: 3 semester hours of sophomore English or permission of instructor.
- 3399. Special Topics in Literature or Language for Non-English Majors.** 3(3-0)
Readings in special topics such as science fiction, detective novels, Chicano literature, Black literature, women's studies or the dialects of American English. Prerequisite: 3 semester hours of sophomore English or permission of instructor.
- 4310. Introduction to Linguistics.** 3(3-0)
An introduction to the scientific study of language. Prerequisite: 6 semester hours of sophomore English.
- 4311. English Grammar and Usage.** 3(3-0)
The structure of the present-day English language, with attention to its varieties and history. Prerequisite: 6 semester hours of sophomore English.
- 4322. British Literature of the Middle Ages.** 3(3-0)
Selected readings in translation from Old English to Middle English poetry and prose, with emphasis on *Beowulf*, the Arthurian legends and the *Canterbury Tales*. Prerequisite: 6 semester hours of sophomore English.

4325. Literature of the British Renaissance. 3(3-0)
Selected readings in poetry, prose and non-Shakespearean drama of the 16th and 17th centuries. Prerequisite: 6 semester hours of sophomore English.

4327. Restoration and Eighteenth-Century British Literature. 3(3-0)
The period from 1660 to 1800 with representative works of the major writers in verse, prose and drama. Prerequisite: 6 semester hours of sophomore English.

4331. The Major Plays of Shakespeare. 3(3-0)
A close analysis of representative comedies and histories and the major tragedies. Prerequisite: 6 semester hours of sophomore English.

4341. Studies in the British Novel. 3(3-0)
Study of significant British novels, with emphasis upon such authors as Fielding, Richardson, Eliot, Hardy, Burgess and Joyce. Prerequisite: 6 semester hours of sophomore English.

4343. Nineteenth-Century British Literature. 3(3-0)
Major writers of the Romantic and Victorian periods. Cultural background and representative works, including poetry and nonfiction prose. Prerequisite: 6 semester hours of sophomore English.

4346. Twentieth Century British Literature. 3(3-0)
Chief modern British writers of poetry, prose and drama. Prerequisite: 6 semester hours of sophomore English.

4361. Studies in the American Novel. 3(3-0)
Study of significant American novels. Emphasis may be on historical development, certain periods, special topics treated by American novelists or varieties of American fiction. Prerequisite: 6 semester hours of sophomore English.

4365. Colonial and Nineteenth-Century American Literature. 3(3-0)
Survey of the chief nineteenth-century poets and prose writers, with some attention to their colonial predecessors. Prerequisite: 6 semester hours of sophomore English.

4366. Twentieth-Century American Literature. 3(3-0)
Survey of the chief twentieth-century American poets and prose writers. Prerequisite: 6 semester hours of sophomore English.

4370. Special Topics in Literature or Language. 3(3-0)
Selected topics in British or American literature and/or world literature and language. A topic for intensive investigation will be selected for each offering of the course. May be repeated once for credit. Prerequisite: 6 semester hours of sophomore English. Credit may not be obtained in both ENGL 4370, when topic is taught from a women's studies perspective and WMST 4370.

4384. Studies in Drama. 3(3-0)
Selected topics in American, British or Continental drama. Emphasis may be on historical development, certain periods or some other approach to the study of drama. May be repeated once when a different topic is scheduled. Prerequisite: 6 semester hours of sophomore English.

4390. Explorations in English. 3(3-0)
An integrated study of language, language activities, composition, the composing process, literature, relating literature and reading and mass media. Current research will be explored. Prerequisite: 9 advanced hours of English.

FRENCH (FREN)

1311. Elementary French I. (FREN 1311) 3(3-0)
For students without previous knowledge of the language. An introductory course teaching the fundamentals of French in order to develop listening, speaking, reading and writing abilities. Language laboratory required.

- 1312. Elementary French II.** (FREN 1312) 3(3-0)
Continuation of FREN 1311. Language laboratory required. Prerequisite: FREN 1311 or departmental approval.
- 2311. Intermediate French.** (FREN 2311) 3(3-0)
Continuation of FREN 1312. Emphasis on speaking and listening abilities. Language laboratory required. Prerequisite: FREN 1312 or two or more years of high school French with departmental approval.
- 2312. Intermediate French.** (FREN 2312) 3(3-0)
Continuation of FREN 2311. Emphasis on reading and writing abilities. Language laboratory available. Prerequisite: FREN 1312 or two or more years of high school French with departmental approval.
- 3301. Advanced Grammar and Composition.** 3(3-0)
The basic principles and formal study of grammar. Prerequisite: 12 semester hours of French.
- 3321. French Literature to 1800.** 3(3-0)
History of French literature in the Middle Ages, Renaissance and classical period through the 18th century. Conducted in French. Prerequisite: 12 semester hours of French.
- 3322. French Literature from 1800.** 3(3-0)
History of French literature from 1800 through contemporary literature. Conducted in French. Prerequisite: 12 semester hours of French.
- 4301. Advanced Written and Oral Composition.** 3(3-0)
Written and oral presentations: expository, persuasive, narrative and descriptive. Prerequisite: 3 semester hours of advanced French.
- 4310. Selected Topics in French Civilization and Literature.** 3(3-0)
Topics include aspects of French civilization such as art, music and cinema and themes presented through all literary genres such as changing roles in society, education, religion and justice. Conducted in French. May be repeated for credit as topic changes. Prerequisite: 6 semester hours of advanced French.
- SPANISH (SPAN)**
- 1313. Elementary Spanish I.** (SPAN 1311) 3(3-1)
Open only to students with little or no previous contact with the Spanish language. An introductory course teaching the fundamentals of Spanish in order to develop listening, speaking, reading and writing abilities. Language laboratory required.
- 1314. Elementary Spanish II.** (SPAN 1312) 3(3-1)
Continuation of SPAN 1313. Language laboratory required. Prerequisite: SPAN 1313 or departmental approval.
- 1373. Spanish for Heritage Speakers.** 3(3-1)
Introductory course designed for students whose greatest exposure to Spanish has been in the home or community rather than the classroom. Building on the linguistic knowledge that heritage speakers already bring to the classroom, the course stresses reading and writing skills. Language laboratory required. Prerequisite: departmental approval.
- 2301. Intermediate Spanish I.** 3(3-0)
A review of Spanish grammar and expansion of basic language skills. Selected readings by Hispanic writers. Conducted in Spanish. Language laboratory available. Prerequisite: SPAN 1314 or two or more years of high school Spanish with departmental approval.
- 2302. Intermediate Spanish II.** 3(3-0)
Continuation of SPAN 2301. Language laboratory available. Prerequisite: SPAN 2301 or SPAN 2311.
- 2311. Intermediate Spanish I.** (SPAN 2311) 3(3-1)
A review of Spanish grammar and expansion of basic language skills. Language laboratory required. Prerequisite: SPAN 1314 or three or more years of high school Spanish with departmental approval.

- 2312. Intermediate Spanish II. (SPAN 2312)** 3(3-0)
Continuation of SPAN 2311. Language laboratory required. Prerequisite: SPAN 2311.
- 3300. Mexican American Literature.** 3(3-0)
Selected Mexican American literature and its accompanying thought covering various periods and the following genres: poetry, the short story, the novel, the theater and the essay. Conducted in Spanish and English.
- 3301. Advanced Spanish Grammar.** 3(3-0)
A review of the basic principles of Spanish grammar to be followed by a detailed study of the finer points of grammar and syntax. Prerequisite: SPAN 2302 or SPAN 2312.
- 3302. Spanish Composition.** 3(3-0)
Literary and technical writing and composition; instruction and practice in basic writing; analysis of different literary prose pieces as models for writing. Conducted in Spanish. Prerequisite: SPAN 2312 or SPAN 2302.
- 3311. Professional Spanish.** 3(3-0)
Enables students to interact and work effectively with the international and domestic Spanish-speaking medical, legal and business worlds. Emphasizes interaction between both English-speaking and Spanish-speaking professional communities and within the Spanish-speaking professional community. Prerequisite: SPAN 2302 or SPAN 2312.
- 3321. Survey of Spanish Peninsular Literature.** 3(3-0)
The history of Spanish literature from its beginning to the present. Conducted in Spanish. Prerequisite: SPAN 2302 or SPAN 2312.
- 3361. Survey of Spanish-American Literature.** 3(3-0)
The history of Spanish-American literature from its beginning to the present. Conducted in Spanish. Prerequisite: SPAN 2302 or SPAN 2312.
- 4311. Spanish Linguistics.** 3(3-0)
A detailed linguistic study of Spanish and a contrastive comparison with English. Prerequisite: SPAN 2302 or SPAN 2312.
- 4319. Hispanic Culture.** 3(3-0)
Survey of Hispanic culture. Main aspects of culture as found in Spain, Spanish America and the Hispanic communities in the U.S.A. Conducted in Spanish. Prerequisite: SPAN 2302 or SPAN 2312.
- 4320. Topics in Spanish Literature.** 3(3-0)
Topics in Spanish American and Spanish Peninsular literature. Conducted in Spanish. May be repeated as topics change. Prerequisites: SPAN 2302 or SPAN 2312.

**Degree Requirements
Bachelor of Arts
English**

| Freshman Year | | | | Junior Year | | | |
|---------------------------------|----------|--|----------|----------------|----------|---------------------|----------|
| ARTS 1201 | 2 | ENGL 1302 | 3 | ENGL 4322, | 3 | ENGL 4310/ | 3 |
| ENGL 1301 | 3 | FREN 1312 or | 3 | ENGL 4325, | | ENGL 4311 | |
| FREN 1311 or | 3 | SPAN 1314 | | ENGL 4327 or | | ENGL 4341/ | 3 |
| SPAN 1313 | | HIST 1302 | 3 | ENGL 4384 | | ENGL 4343/ | |
| HIST 1301 | 3 | [^] <i>Social/behavioral</i> | 3 | ENGL 4331 | 3 | ENGL 4346/ | |
| [^] <i>Mathematics</i> | <u>3</u> | [^] <i>Visual/performing arts</i> | <u>3</u> | Elective | 3 | ENGL 4384 | |
| | 14 | | 15 | Minor | <u>6</u> | Minor, adv. | 6 |
| | | | | | 15 | *PHIL/RELG Elective | <u>3</u> |
| | | | | | | | 15 |
| Sophomore Year | | | | Senior Year | | | |
| COMS 1311/ | 3 | ENGL 2342 or | 3 | ENGL 4361, | 3 | ENGL 4361/ | 3 |
| COMS 1315/ | | ENGL 2362 | | ENGL 4365, | | ENGL 4365/ | |
| COMS 2325 | | FREN 2312 or | 3 | ENGL 4366 or | | ENGL 4366/ | |
| ENGL 2342 or | 3 | SPAN 2302/ | | ENGL 4370 | | ENGL 4370 | |
| ENGL 2362 | | SPAN 2312 | | Elective, adv. | 3 | Elective | 2 |
| FREN 2311 or | 3 | POLS 2302 | 3 | Elective, adv. | 3 | Elective, adv. | 3 |
| SPAN 2302/ | | [^] <i>Global learning</i> | 3 | ENGL, adv. | 3 | Elective, adv. | 3 |
| SPAN 2311 | | Science w/lab | <u>4</u> | Minor, adv. | <u>3</u> | Minor, adv. | <u>3</u> |
| POLS 2301 | 3 | | 16 | | 15 | | 14 |
| Science w/lab | <u>4</u> | | | | | | |
| | 16 | | | | | | |

Total Hours Req'd: 120

*To be chosen from PHIL 1301/PHIL 3301/PHIL 3321/PHIL 3322 or RELG 1301/RELG 3339.
All courses must be approved by the department.

**Degree Requirements
Bachelor of Arts
English with Teaching Certification**

| Freshman Year | | | | Junior Year | | | |
|---|----------|--|----------|-------------|----------|------------|----------|
| ARTS 1201 | 2 | COMS 1311 | 3 | EDED 3302 | 3 | EDED 3332 | 3 |
| ENGL 1301 | 3 | ENGL 1302 | 3 | EDED 3310 | 3 | EDED 3362 | 3 |
| FREN 1311 or | 3 | FREN 1312 or | 3 | EDED 3333 | 3 | EDRG 3344 | 3 |
| SPAN 1313 | | SPAN 2312 | | EDRG 3314 | 3 | EDRG 4389 | 3 |
| HIST 1301 | 3 | HIST 1302 | 3 | ENGL 4311 | 3 | ENGL 4341/ | 3 |
| [^] <i>Mathematics</i> | <u>3</u> | [^] <i>Visual/performing arts</i> | <u>3</u> | ENGL 4331 | <u>3</u> | ENGL 4343/ | |
| | 14 | | 15 | | 18 | ENGL 4346/ | |
| | | | | | | ENGL 4384 | |
| | | | | | | ENGL 4361/ | <u>3</u> |
| | | | | | | ENGL 4365/ | 18 |
| | | | | | | ENGL 4366/ | |
| | | | | | | ENGL 4370 | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 or | 3 | ENGL 2342 or | 3 | EDRG 3321 | 3 | EDED 4623 | 6 |
| ENGL 2362 | | ENGL 2362 | | EDRG 4314 | 3 | EDSE 4391 | 3 |
| FREN 2311/FREN 2312 | 3 | FREN 2311/FREN 2312 | 3 | EDRG 4330 | 3 | ENGL 4361/ | <u>3</u> |
| or SPAN 2301/ | | or SPAN 2302/ | | ENGL 4322/ | 3 | ENGL 4365/ | 12 |
| SPAN 2311 | | SPAN 2312 | | ENGL 4325/ | | ENGL4366/ | |
| POLS 2301/POLS 2302 | 3 | POLS 2301/POLS 2302 | 3 | ENGL 4327/ | | ENGL 4370 | |
| [^] <i>Natural sciences</i> | 3 | [^] <i>Global learning</i> | 3 | ENGL 4384 | | | |
| [^] <i>Social/behavioral</i> * | <u>3</u> | [^] <i>Natural sciences</i> | <u>3</u> | ENGL 4390 | <u>3</u> | | |
| | 15 | | 15 | | 15 | | |

Total Hours Req'd: 122

* SOCI 2361 is suggested to fulfill the Social/behavioral requirement.
Note: Apply for admission to the Teacher Education Program after completing 60 academic hours.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

DEPARTMENT OF MATHEMATICS

Michael Houf, *Interim Chair*

Rhode Hall 217. MSC 217. Extension 3517.

Professors

Bingham, Bodjanova, Wang, Wu

Associate Professors

Ahangar, Carroll, Sedory, Thurston

Assistant Professors

Ahmed, Chen, Mack, Muzheve, Singh

Lecturers

Cortez, Sabrio

The department offers several programs designed to give the student an insight into the structure and applications of mathematics and statistics necessary for industrial or governmental employment, teaching or pursuit of an advanced degree in mathematics and statistics.

The faculty members are committed to educating students in the scientific and engineering environment. Through mathematics courses, students will develop their logical reasoning, critical thinking, technical communication and computational skills.

The department serves students from other disciplines, students in the science, education, engineering and mathematics, as well as the community, by offering a wide range of interdisciplinary courses.

The department offers several programs designed to give the student insight into the structure and applications of mathematics necessary for industrial or governmental employment, teaching or pursuit of an advanced degree in mathematics.

Students are allowed to register for freshman mathematic and statistic courses appropriate to their high school mathematics preparations and/or entrance examination scores as determined by the department.

MATHEMATICS (MATH)

1314. College Algebra. (MATH 1314)

3(3-0)

College-level topics in algebra including functions, graphs, variation, piecewise defined functions, equations of lines, elementary curve fitting, quadratic equations and functions, systems of linear and nonlinear equations, composition of functions, inverse functions, exponential and logarithmic functions and applications related to these topics. Prerequisite: two years of high school algebra and/or appropriate scores on mathematics placement tests.

1316. Trigonometry. (MATH 1316)

3(3-0)

Fundamental notions and definitions, functions of angles, logarithms, circular measure, solution of triangles. Required of all engineering students. Prerequisite: two years of high school algebra or MATH 1314 (MATH 1314 and MATH 1316 may be taken concurrently.)

1324. Mathematics for Business and Economics I. (MATH 1324)

3(3-0)

A course designed for students in business administration. Selected topics from finite mathematics including: linear inequalities, vectors, matrices, linear programming and probability. Prerequisite: two years of high school algebra and/or appropriate scores on mathematics placement tests.

1325. Mathematics for Business and Economics II. (MATH 1325)

3(3-0)

Applications of the theory of extrema. Area under a curve and its applications. Introduction to statistical measures. Prerequisite: MATH 1314 or MATH 1324.

- 1334. Contemporary Mathematics.** 3(3-0)
 An introduction to several contemporary applications of mathematics for the nonmajor. Emphasis is on the variety of problems which can be modeled and solved by analytic and quantitative means. Topics will vary, but may include such as: applications of graph theory to management problems; encoding and encrypting information; problems of social choice-fair division, voting systems, conflict; topics in geometry; and data analysis. Prerequisites: ALGE 0301 and/or appropriate scores on mathematics placement tests.
- 1348. Analytic Geometry.** (MATH 1348) 3(3-0)
 Equations and their graphs. Cartesian and polar coordinates, the straight line, circles and conic sections. Operations with vectors, the dot and cross product. Prerequisites: MATH 1314 and MATH 1316.
- 1350. Fundamentals of Mathematics I.** 3(3-0)
 Problems from number theory, number systems, systems of operations and proportional reasoning. Requires approaching problems from multiple perspectives, drawing connections among those perspectives and strengthening flexibility and fluency in mathematical thinking and communicating. Not applicable for credit in the physical sciences or engineering. Prerequisite: MATH 1314 or higher.
- 1351. Fundamentals of Mathematics II.** 3(3-0)
 Problems from probability, statistics, measurement, geometry and spatial thinking. Requires approaching problems from multiple perspectives, drawing connections among those perspectives and strengthening flexibility and fluency in mathematical thinking and communicating. Not applicable for credit in the physical sciences or engineering. Prerequisite: MATH 1350.
- 2413. Calculus I.** 4(3-0-2)
 Limits and continuity. Definition of the derivative of a function and techniques of differentiation. Applications of the derivative to maximizing or minimizing a function, curve sketching and rate of change problems. Introduction to the integral of a function, with an application to areas. Prerequisite: MATH 1348.
- 2414. Calculus II.** 4(3-0-2)
 This course is a continuation of MATH 2413. Differentiation and integration of logarithmic, exponential and trigonometric functions. Techniques of integration. Applications of the integral to problems such as volumes of revolution, work, arc length and fluid pressure. Prerequisite: MATH 2413.
- 3415. Calculus III.** 4(3-0-2)
 This course is a continuation of MATH 2414. Topics to be covered include sequences, series, expansion of functions, multiple integrals and partial derivatives. Prerequisite: MATH 2314 or MATH 2414.
- 3320. Differential Equations.** 3(3-0)
 The ordinary differential equations of physics, chemistry and engineering; methods for their solution and the properties of their solution. Introduction to partial differential equations. Prerequisite: MATH 2414.
- 3325. An Introduction to Mathematical Proofs.** 3(3-0)
 Principles and techniques of discovering and writing correct mathematical proofs. Independently prove theorems from various areas in mathematics, which may include topics from logic, the structure of the real number system, number theory, geometry and algebra. Prerequisite: MATH 2413.
- 3340. Linear Algebra with Applications.** 3(3-0)
 Systems of linear equations. Matrices and determinants. Vector spaces, subspaces, bases and dimension. Linear transformations and their representations by matrices. Orthogonality, eigenvectors and diagonalization. Not applicable for credit in the physical sciences or engineering. Prerequisite: MATH 2413.
- 3360. Modern Geometry.** 3(3-0)
 Axiomatic approach, set theory and applications in geometry. Not applicable for credit in the physical sciences or engineering. Prerequisite: MATH 3325.

- 3370. Discrete Mathematics.** 3(3-0)
This course covers many topics in mathematics which are important in computer science. Some of these topics are sets, relations, functions, algorithms, graphs, monoids, lattices, Boolean algebras and graphs. Prerequisite: 3 semester hours of advanced mathematics.
- 3371. Problem Solving with Computers.** 3(3-0)
Brief historical overview of computing and computers; strategies for solving problems by computers; programming in a higher level language. Not applicable for credit in the physical sciences or engineering. Prerequisite: MATH 2413.
- 3390. Selected Topics in Mathematics.** 3(3-0)
Different topics will be covered at varying times. May be repeated for credit with consent of the instructor. Prerequisite: 3 semester hours of advanced mathematics.
- 4320. Advanced Calculus.** 3(3-0)
Partial differentiation, Lagrange multipliers, Leibnitz's rule, multiple integrals, vector analysis, infinite series, uniform convergence and Fourier series.
- 4321. Real Variables.** 3(3-0)
The real number system, its structure and properties. Properties of real functions and sequences, including uniform continuity and the Cauchy criterion. Introduction to the theory of sets. Theory and application of the derivative. Introductory concepts of function spaces, norms and metrics. Prerequisite: 6 semester hours of advanced mathematics, including MATH 3325.
- 4340. Modern Algebra.** 3(3-0)
Properties of the Integers: divisibility, prime factorization and congruences. Integral domains, rings and fields. Groups, permutations and cosets. A historical development of these topics is included. Not applicable for credit in the physical sciences or engineering. Prerequisite: MATH 3325.
- 4341. Linear Algebra and Matrix Theory.** 3(3-0)
Vector spaces and their linear subspaces. Representation of linear transformations by matrices. Normal forms, eigenvalues, special transformations and applications. Prerequisite: 6 semester hours of advanced mathematics.
- 4342. Algebraic Structure.** 3(3-0)
An intensive axiomatic study of groups, rings, polynomial rings, fields and modules, along with their principal substructures. Emphasis on classification and structure theorems. Prerequisite: 6 hours of advanced mathematics.
- 4370. Vector Analysis.** 3(3-0)
Vector algebra and geometry. Scalar and vector products. Vector functions and motion in polar coordinates. Scalar and vector fields with applications to line and surface integrals. Prerequisites: MATH 3415 and MATH 3320 or equivalent.
- 4372. Mathematics for Physics and Engineering I.** 3(3-0)
Infinite series, matrix methods, vector analysis, applied multivariate calculus and Fourier series. Prerequisites: MATH 3415 and MATH 3320 or their equivalent.
- 4373. Applications of Matrix Methods.** 3(3-0)
Matrices and their inverses, determinants, eigenvalues and eigenvectors, Jordan canonical forms. Applications to simultaneous linear equations, matrix calculus and linear differential equations. Prerequisites: MATH 3415 and MATH 3320.
- 4374. Numerical Analysis.** 3(3-0)
The mathematical formation of the concepts in numerical analysis. These concepts include the theory of errors, roots of equations, interpolation, linear systems of equations, numerical differentiation and integration and solutions of ordinary differential equations. Prerequisites: MATH 3415 and MATH 3320.

STATISTICS (STAT)

1342. Elementary Statistics. (MATH 1342)

3(3-0)

Elementary description of tools of statistics inference, including empirical and theoretical distributions, probability, sampling, treatment of both continuous and discrete data, correlation and applications to practical problems. Prerequisite: MATH 1314 or MATH 1324.

4301. Biostatistics.

3(3-0)

For students in biology, health sciences, human sciences and wildlife science. Descriptive and inferential statistics, basic probability concepts, probability distributions, estimation, hypothesis testing, correlation, simple linear regression, principles of epidemiology, statistical vs. clinical significance and quasi-statistical methods. Prerequisite: MATH 1314.

4303. Statistical Methods.

3(3-0)

Calculus-based probability, discrete and continuous random variables, joint distributions, sampling distributions, the central limit theorem, descriptive statistics, interval estimates, hypothesis tests, ANOVA, correlation and simple regression. Prerequisite: MATH 2414.

4350. Probability.

3(3-0)

Sample spaces, combinatorics, independence, conditional probability and Bayes' rule. Discrete and continuous probability distributions, Chebychev's inequality and limit theorems. Prerequisite: MATH 3415.

4351. Mathematics Theory of Statistics.

3(3-0)

Sampling distributions, estimation properties and methods, testing hypothesis, power of tests and likelihood ratios. Prerequisites: STAT 4350 or the equivalent and 3 semester hours of advanced mathematics.

**Degree Requirements
Bachelor of Arts
Mathematics**

| | | | | | | | |
|-----------------------|----|-------------------------|----|--------------------|----|-----------------------|----|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | ENGL 1302 | 3 | ENGL 2362 or | 3 | #MATH 3370 | 3 |
| ENGL 1301 | 3 | HIST 1302 | 3 | ENGL 2314 | | #MATH 4321 | 3 |
| HIST 1301 | 3 | #MATH 2413 | 4 | #MATH 3320 | 3 | #MATH 4341 or | 3 |
| #STAT 1342 | 3 | ^Natural sciences, same | 4 | #MATH 3325 | 3 | MATH 4373 | |
| ^Natural sciences | 4 | | 14 | ^Global learning | 3 | Minor | 3 |
| | 15 | | | Foreign language | 3 | Foreign language | 3 |
| | | | | | 15 | | 15 |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 or | 3 | #MATH 3415 | 4 | #MATH/STAT, adv. | 3 | *Elective/Minor, adv. | 2 |
| ENGL 2314 | | POLS 2302 | 3 | #MATH/STAT, adv. | 3 | #MATH/STAT, adv. | 3 |
| #MATH 2414 | 4 | ^Oral communication | 3 | Minor | 3 | #MATH/STAT, adv. | 3 |
| POLS 2301 | 3 | ^Visual/performing arts | 3 | *Minor, adv. | 3 | *Minor, adv. | 3 |
| ^Social/behavioral | 3 | Foreign language | 3 | *Minor, adv. | 3 | *Minor, adv. | 3 |
| Foreign language | 3 | | 16 | | 15 | | 14 |
| | 16 | | | | | | |

Total Hours Req'd: 120

#No mathematics or statistics course may be counted toward the degree unless the grade is at least a "C."

**Degree Requirements
Bachelor of Science
Mathematics**

| | | | | | | | |
|-------------------------|----|-------------------------|----|-----------------------|----|------------------|----|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | ENGL 1302 | 3 | ENGL 2342 | 3 | ENGL 2314 or | 3 |
| ENGL 1301 | 3 | HIST 1302 | 3 | #MATH 3320 | 3 | ENGL 2362 | |
| HIST 1301 | 3 | #MATH 2413 | 4 | #MATH 3325 | 3 | #MATH 3370 | 3 |
| #MATH 1348 | 3 | ^Natural sciences, same | 4 | Minor | 3 | #MATH 4321 | 3 |
| ^Natural sciences | 4 | Kinesiology | 1 | Minor | 3 | #MATH 4341 or | 3 |
| | 15 | | 15 | | 15 | MATH 4373 | |
| | | | | | | Minor | 3 |
| | | | | | | | 15 |
| Sophomore Year | | | | Senior Year | | | |
| #MATH 2414 | 4 | #MATH 3415 | 4 | *Elective, adv. | 3 | *Elective, adv. | 3 |
| POLS 2301 | 3 | POLS 2302 | 3 | #MATH/STAT, adv. | 3 | *Elective, adv. | 3 |
| ^Global learning | 3 | #STAT 1342 | 3 | #MATH/STAT, adv. | 3 | #MATH/STAT, adv. | 3 |
| ^Visual/performing arts | 3 | ^Oral communication | 3 | *Minor, adv. | 3 | #MATH/STAT, adv. | 3 |
| Kinesiology | 1 | ^Social/behavioral | 3 | *Minor/Elective, adv. | 3 | *Minor, adv. | 3 |
| | 14 | | 16 | | 15 | | 15 |

Total Hours Req'd: 120

Minor of 18-24 semester hours in one natural science or computer science.

*45 semester hours of advanced course work is required.

#No mathematics or statistics course may be counted toward the degree unless the grade is at least a "C."

^For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

**Degree Requirements
Bachelor of Science
Mathematics with Teaching Certification**

| | | | | | | | |
|-------------------------------|----------|-------------------------------------|----------|--------------------|----------|--------------------------|------------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | ENGL 1302 | 3 | EDED 3310 | 3 | EDED 3302 | 3 |
| COMS 1311 | 3 | HIST 1302 | 3 | ENGL 2362 or | 3 | EDED 3333 | 3 |
| ENGL 1301 | 3 | #MATH 2413 | 4 | ENGL 2314 | | #MATH 4321 | 3 |
| HIST 1301 | 3 | #STAT 1342 | 3 | #MATH 3370 | 3 | #MATH 4341 or | 3 |
| #MATH 1348 | 3 | [^] Visual/performing arts | <u>3</u> | #MATH 3415 | 4 | MATH 4373 | |
| Kinesiology | <u>1</u> | | 16 | POLS 2301 | <u>3</u> | POLS 2302 | <u>3</u> |
| | 15 | | | | 16 | | 15 |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 | 3 | #MATH 3320 | 3 | EDED 3332 | 3 | EDED 4623 | 6 |
| #MATH 2414 | 4 | #MATH 3360 | 3 | EDED 3362 | 3 | EDRG 4314 | 3 |
| #MATH 3325 | 3 | [^] Global learning | 3 | #MATH 4340 | 3 | EDSE 4391 | <u>3</u> |
| [^] Natural sciences | 4 | [^] Natural sciences, same | 4 | #STAT 4303 | 3 | | 12 |
| Kinesiology | <u>1</u> | [^] Social/behavioral | <u>3</u> | #STAT 4350 | <u>3</u> | | |
| | 15 | | 16 | | 15 | | |
| | | | | | | Total Hours Reqd: | 120 |

#No mathematics or statistics course may be counted toward the degree unless the grade is at least a "C."
45 semester hours of advanced course work is required.

NOTE: Apply for admission to the Teacher Education Program after completing 60 hours.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

MILITARY SCIENCE (ROTC)

U.S. ARMY ROTC

Ariel Rodriguez, *Professor of Military Science*
Karr Memorial Hall. MSC 204. Extension 3201.

Professor

Rodriguez

Instructors

Cantu, Gibson, Hinojosa, Soliz

The department's objective is the development of selected men and women with potential to serve as commissioned officers in the active Army, National Guard or Army Reserve. A student who completes the program will have developed leadership and managerial potential; have a basic understanding of military fundamentals and the requirements of national security; have acquired an understanding of the fundamental concepts of military art and science; have developed a strong sense of personal honor, integrity and individual responsibility; and have developed a better understanding of human relationships. The leadership and management experience gained through Army ROTC and service as a commissioned officer will benefit the student in civilian as well as in military science and national defense pursuits.

Minor

A student may pursue an interdisciplinary minor in Military Science. Courses for a total of 22 semester hours should be selected in consultation with the Professor of Military Science.

Army Scholarship Program: Any student who meets prerequisites may compete for nationally awarded US Army scholarships which pay for tuition, books, fees and other purely educational costs and a tax-free monthly subsistence allowance for 10 months of each year the scholarship is in effect.

Army Training-Airborne and Air Assault or Other Training: Selected cadets may be eligible to compete for attendance at Airborne, Air Assault or other training as available. Selection is based upon motivation, physical condition and academic Military Science performance.

Veteran's Assistance: Veterans who enroll in upper level Military Science receive a tax-free monthly subsistence allowance for 10 months each of two years in addition to benefits provided by the Veterans' Administration, Veteran's Education Assistance Program or the GI Bill/Army College Fund.

Leadership Laboratory: Required for Military Science courses. Designed to give the student an opportunity to practice hands-on lessons learned in class. Students are placed in leadership roles executing scenarios that challenge their organizational skills through the use of small-unit tactics. Scenarios may involve survival, water safety, rappelling, map reading and land navigation and patrolling using paint ball equipment.

LOWER DIVISION MILITARY SCIENCE CURRICULUM

Lower division courses provide an opportunity for students to satisfy their curiosity about the U.S. Army by exploring their own interests and aptitudes in courses which carry no obligation for further study and no obligation for military service. All Military Science courses may be used to satisfy kinesiology of general education requirements.

1211. Ranger Challenge Laboratory.

2(1-2)

Practical leadership and teamwork training in rappelling, rope bridges, weapons firing, map reading and land navigation, water safety, patrolling and other ranger skills. Includes a weekend field trip where the techniques learned will be applied to competitive events. May be repeated for credit. Prerequisite: approval of the Professor of Military Science.

1305. Leadership and Personal Development.

3(2-2)

Personal challenges and competencies that are critical for effective leadership. How the personal development of life skills such as time management, physical fitness and stress management relates to leadership, officership and Army operations.

1306. Introduction to Tactical Leadership. 3(2-2)
Leadership fundamentals such as setting direction, problem solving, listening, presenting briefs, providing feedback and using effective writing skills. Leadership values, attributes, skills and actions in the context of practical, hands-on and interactive exercises.

2305. Innovative Team Leadership. 3(2-2)
Creative and innovative tactical leadership strategies and styles, studying historical case studies and engaging in interactive student exercises. Personal motivation and team building in the context of planning, executing and assessing team exercises. Prerequisites: ROTC 1305, ROTC 1306 or approval of the Professor of Military Science.

2306. Foundations of Tactical Leadership. 3(2-2)
Challenges of leading teams in a complex contemporary operating environment. Cross-cultural challenges of leadership in a constantly changing world, applied to practical Army leadership tasks and situations. Prerequisite: ROTC 2305 or approval of the Professor of Military Science.

UPPER DIVISION MILITARY SCIENCE CURRICULUM

The Advanced Military Science Program at A&M-Kingsville allows qualified students to earn a commission as a Second Lieutenant in the active Army, the Army Reserve or the National Guard. These courses also allow the first opportunity for most college students to make a formal and personal commitment to the preservation of the values embodied in the Constitution of the United States. For enrollment in upper level military science courses the student must meet these prerequisites:

- a. be enrolled as a full-time student (12 semester hours minimum for an undergraduate).
- b. be of good moral character as evidenced in the community and the university.
- c. have approximately two academic years remaining toward a baccalaureate degree or advanced degree (the requirement may be waived) and a minimum GPA of 2.0.
- d. meet medical fitness requirements as prescribed by U.S. Army regulations.
- e. either (1) satisfactorily complete ROTC 1305, ROTC 1306, ROTC 2305 and ROTC 2306; (2) possess qualification through any JROTC program (full or partial qualification depending upon participation); (3) satisfactorily complete the six-week summer basic camp at Fort Knox, Kentucky; (4) qualify through enlistment in the National Guard or Army Reserve (after successful completion of basic training); or (5) honorably complete enlisted service with a favorable reenlistment code, or have at least 60 semester hours and agree to attend the six-week summer basic camp at Fort Knox, Kentucky, the summer following enrollment in upper-level military science courses.

Qualified enrollment in upper division military science courses entitles each cadet to a tax-free monthly subsistence allowance for 10 months per year for two years.

3305. Adaptive Tactical Leadership. 3(3-2)
Adaptive tactical leadership skills applied to squad tactical operations. Developing leadership and critical thinking abilities aimed toward success at the ROTC summer Leadership Development and Assessment Course (LDAC).

3306. Leadership in Changing Environments. 3(3-2)
Situational leadership challenges building cadet awareness and skills in leading tactical operations up to platoon level. Aspects of combat, stability and support operations. Conducting military briefings and developing proficiency in garrison operations orders.

3405. Internship in Military Science. 4(15-25)
Six weeks of total environment training consisting of practical application of leadership and management skills. Formal instruction in tactics, techniques and skills required for all future officers. Prerequisites: ROTC 3305 and/or ROTC 3306 and full contract status with the U.S. Army.

4105. Advanced Military Science. 1(2-0)
Special problems course. Individual study. May be repeated for credit. Approval of Professor of Military Science required.

4305. Developing Adaptive Leaders.

3(3-2)

Planning, executing and assessing complex operations, functioning as a member of a staff and providing performance feedback to subordinates. Assessing risk, making ethical decisions and leading fellow ROTC students. Military justice and personal processes, preparing cadets to become army officers. Prerequisites: ROTC 3305, ROTC 3306 or approval of the Professor of Military Science.

4306. Leadership in a Complex World.

3(3-2)

Leading in the complex situation of current military operations in the contemporary operating environment. Differences in customs and courtesies, military law, principles of war and rules of engagement in the face of international terrorism. Aspects of interacting with non-governmental organizations, civilians on the battlefield and host nation support. Prerequisite: ROTC 4305 or approval of the Professor of Military Science.

DEPARTMENT OF MUSIC (MUSI/MUSA)

Paul M. Hageman, *Chair*

Bellamah Music Building 112. MSC 174. Extension 2803.

Regents Professor

Hageman

Professors

Cole, KingSanders, Sanders

Associate Professors

Fluman, Sholtis, Warth, Williams

Assistant Professors

Cord, Diaz, Hoskisson, Kihle, Kono, Reinhuber, Seidman

Visiting Assistant Professor

Brou

Instructor

Shelton

The department serves three purposes: to provide training to qualified students for the music profession, to supply an area of artistic enrichment for nonmusic majors and to create a genuine musical influence on the entire university family. Students wishing to follow careers in professional teaching or performance should pursue the appropriate program. Students completing the degree with a major in music with teacher certification will qualify to receive the All-level Provisional Certificate, vocal or instrumental. This latter program will qualify successful candidates as teachers of music for all grades in Texas under certification regulations established by the Texas Education Agency. The department is an institutional member of the National Association of Schools of Music.

Minors and Electives

Qualified nonmusic majors may continue their music studies either as elective courses or as minor concentrations in applied music or general cultural music. Music ensembles are open to all university students with the consent of the instructors.

The following programs, which provide only nonprofessional training, are designed for those desiring the cultural enrichment of a minor in music:

Music Minor (Cultural): MUSI 1317, MUSI 1117, MUSI 2301, MUSI 2316, MUSI 2317, MUSI 2116, MUSI 2117, MUSI 2306, MUSI 4307, MUSI 4308 (24 semester hours).

Music Minor (Performance) -- MUSI 1316, MUSI 1317, MUSI 1116, MUSI 1117, MUSI 2306, four years of applied music on one instrument or voice at one lesson per week (8 hours) and ensemble participation for four years (8 hours); half recital required (27 semester hours).

Frank C. Smith Recital Hall and **Jones Auditorium**: The department presents student, faculty and guest recitals throughout the year, including the annual jazz festival, jazz bash, summer musical, operettas, choir concerts and band concerts.

Majors

Department Placement Examinations

Entering undergraduate and graduate music majors will be given placement examinations prior to their first registration. These examinations enable the student with an exceptional background or previous college training to proceed on the basis of this experience.

General Requirements

All full-time (12 semester hours or more) music majors are required to:

- a. All students seeking the Bachelor of Music with Teacher Certification degree must register for and participate in their prescribed major ensemble until they student teach.
- b. Register for applied music until degree requirements are completed. The student should have attained at least a 4000-level of proficiency and have satisfied all jury and recital requirements.
- c. Register for and pass a minimum of 4 semester hours of class piano (MUSI 1181, MUSI 1182, MUSI 2181, MUSI

2182). A student may test out of any semester of this requirement by successful completion of a piano proficiency exam. If the proficiency test is not passed at the completion of 4 semester hours of class piano, a student may continue to work independently for the exam. The student also has the option of retaking MUSI 2181 - MUSI 2182 or taking one credit of piano applied until the proficiency exam is successfully completed. This exam must be passed prior to registration for MUSI 3394, Advanced Music Concepts, (if in music with teacher certification) or prior to graduation (if performance major).

- d. Enroll in MUSI 1000, Recital Seminar. To receive credit for this non-tuition course, the student must attend a minimum of twenty approved concerts, recitals or University Interscholastic League approved music events per semester. Students must enroll each term except when student teaching; normally seven semesters credit are required for graduation.
- e. Perform in at least one public recital per semester (if registered at 1000-level or above).
- f. Fulfill solo recital requirements as follows:

| | | |
|---------------------------------|--------------------|--------------------|
| | <u>Junior Year</u> | <u>Senior Year</u> |
| B.M. Performance | Half Recital | Full Recital |
| B.M. with Teacher Certification | | Half Recital |
| B.A. Performance Minor | | Half Recital |

A faculty hearing committee must approve the entire program at least two weeks prior to the recital performance date. The same committee will approve or disapprove the recital itself.

- g. Prior to the junior year or the time a student would normally have completed 60 semester hours, the student is required to file an official transcript in the music office in order that a degree plan may be prepared and meet with a faculty review committee to determine overall and music grade point average, progress in applied music and progress in keyboard proficiency, as well as whether the student has the necessary qualities to become a successful teacher (if in the field of music with teacher certification).
- h. Students majoring in music must make at least a grade of C in every music course taken toward the degree. In sequential music courses, a grade of C must be made in order to progress to the next music course in the sequence.
- i. At the conclusion of the fourth semester of music theory (MUSI 2317-2117), students must take and pass the Sophomore Theory Exam in order to proceed to the upper level theory courses.

Music Theory

The sequence for music theory courses is as follows: MUSI 1316-1116, MUSI 1317-1117, MUSI 2316-2116, MUSI 2317-2117, MUSI 4318, MUSI 3312, MUSI 3314, (MUSI 4319 for performance majors only). Students must make a C or better in order to progress to the next course in the sequence.

1116. Introduction to Basic Aural Training. (MUSI 1116) 1(0-2)
Introduction to aural skills fundamentals including emphasis on melodic, harmonic dictation and sight-singing of music of various ethnic origins and historical style periods.

1117. Basic Aural Training. (MUSI 1117) 1(0-2)
Emphasis on dictation and sight-singing of music of various ethnic origins and historical periods. Prerequisite: MUSI 1116 with a grade of C or better, or a satisfactory score on the departmental Placement Exam (Music Theory).

1163. Jazz Theory and Improvisation. (MUSI 1163) 1(2-0)
A detailed look at the theory of jazz with respect to improvisation.

1164. Advanced Jazz Theory and Improvisation. 1(2-0)
A continuation and practical application of elements of Jazz Theory and Improvisation. Prerequisite: MUSI 1163.

1301. Materials of Music. (MUSI 1301) 3(2-2)
Fundamentals of music with emphasis on developing basic music reading skills on simple melody and/or keyboard instruments. May not apply toward music major or minor.

1316. Introduction to Basic Musicianship. 3(3-0)
Introduction to music fundamentals and skills including pitch recognition in various clefs, rhythm competency, basic harmonic construction and recognition, harmonic and melodic usage in various historical style periods.

1317. Basic Musicianship. 3(3-0)
Introduction to the fundamental elements of music (e.g. pitch, intensity, duration and timbre) and their interrelationship as the foundation of tonal harmonic structure. Prerequisite: MUSI 1316 with a grade of C or better or a satisfactory score on the departmental Placement Exam (Music Theory).

2116-2117. Intermediate Aural Training. (MUSI 2116, MUSI 2117) 2(0-2)
Continuation of MUSI 1117.

2316-2317. Intermediate Musicianship. 6(3-0)
Continuation of MUSI 1317.

3312. Orchestration. 3(3-0)
A continuation and practical application of elements of Music Theory and Aural Training. Study of the compass, techniques and color of the instruments of the orchestra and band and their combinations. Projects in scoring in full orchestra, band and small ensembles.

3314. Composition. 3(3-0)
The practical application of creative principles in analysis and original writing of the smaller forms. The course will include 18th Century counterpoint: two, three and four part writing, canon, fugue and double counterpoint. Prerequisites: MUSI 2316, MUSI 2317.

4318. Analytical Techniques I. 3(3-0)
Aural and visual analysis techniques in all musical styles. All elements in music; form, vocal, piano, chamber and full orchestra scores.

4319. Analytical Techniques II. 3(3-0)
A continuation of MUSI 4318. Required of performance music majors. Prerequisite: MUSI 4318.

History and Literature of Music

1162. Diction. (MUSI 1162) 1(1-1)
Studies and practice in diction of French, German and Italian languages through use of vocal literature of 17th, 18th, 19th and 20th centuries.

2301. Structure of the Arts. 3(2-4)
Art, music and theatre arts are combined in selected problems dealing with arts structure. Creative production is the result of studio activity and critique.

2306. Introduction to Music History and Literature. 3(3-0)
Designed for music students with some background in music. Techniques of intelligent listening with historical perspective. Emphasis on basic concepts in music and their evolution: texture, form, tonality, etc. Listening techniques to develop aural sensitivity to stylistic features. Outside listening required.

2308. History of Jazz. 3(3-0)
The study of the history and development of jazz music, including the various styles and influences that have shaped the many trends in jazz music. Jazz artists and recordings from both a musical and a historical perspective. Open to both music and non-music majors.

2310. History of Rock and Roll. 3(3-0)
The history of rock music from its roots to its most recent trends, with the emphasis on rock as a musical style. Musical parameters (rhythm, harmony, melody, form, texture) as they apply to rock music. Thorough historical detail and social context for the various rock styles presented. Open to both music and non-music majors.

3302. Women and the Arts. 3(3-0)
Issues surrounding the participation of women in the arts. Selected women who have contributed to the visual and performing arts throughout history are studied in relation to the culture of their time and the principles related to the arts. No previous experience in theatre, art or music required. Prerequisite: completion of visual/performing arts component requirement. Credit may be obtained in only one of ARTS 3302, MUSI 3302, THEA 3302 or WMST 3302.

3320. Music of Many Cultures. 3(3-0)
Theories, practices and styles of traditional music of various cultures throughout the world such as Sub-Saharan Africa, India, Israel, Thailand, Bali, China, Japan, South America, Polynesia and Native America.

4307-4308. Music History and Literature. 6(3-0)
Development of musical styles, schools of composition, bibliography and evolution of the art of music. Outside listening required. Prerequisite: MUSI 2306.

Music Education

1190. Marching Band Techniques. 1(0-2)
Fundamentals of and the techniques involved in directing a marching band.

1195. Instruments for Elementary Music. 1(0-3)
Study of instruments used in the elementary music classroom including various recorders, the Orff instrumentarium (xylophone, metallophone, glockenspiel) and frame drum.

3196. Basic Conducting. 1(0-3)
Theory and practice of conducting for both vocal and instrumental groups, with emphasis on dealing with incomplete instrumentation and young performers in vocal and instrumental music. Include conducting techniques, score reading and analysis and rehearsal techniques.

3391. Foundations of Music. 3(3-0)
Develop a foundation for music literacy and skills through vocal expression, instrumental playing and movement. The basic elements of music; i.e., beat, rhythm, melody, form, timbre and harmony, will be covered.

3393. Elementary Music Concepts. 3(3-0)
The study of basic musical concepts for application in the elementary classroom through performance and participation. Prerequisite: MUSI 1195.

3394. Advanced Music Concepts. 3(3-0)
Philosophy, content organization and discussion of the modern performance concepts of music. Emphasis placed on evaluation of musical concepts with analysis of consequent problems.

3397. Conducting II. 3(2-2)
Theory and practice of conducting and organizing groups at the secondary school level. Includes refining baton skills, score analysis, arranging/scoring techniques, performance practices of choral and instrumental ensembles, programming, rehearsal techniques and laboratory experience. Prerequisites: MUSI 3312 and MUSI 3196.

4330. Introduction to Orff Schulwerk. 3(3-0)
Philosophy and pedagogy of Orff Schulwerk. Emphasis on rhythmic speech, body percussion, singing, playing musical instruments appropriate for use by children, elemental forms, pentatonic folk melodies, soprano recorder and improvisation. Prerequisite: MUSI 3393.

4399. Special Problems. V:1-3
For advanced students in music who wish to pursue further some special field of learning. May be repeated for a maximum of 6 semester hours when problem changes.

Applied Music

The courses in applied music are designed to meet the requirements and desires of the students who wish to major in performance, to major in music with teacher certification or take applied music as an elective or minor, or to begin study in applied music to use as a teaching tool or as an area of enrichment where public performance is not the goal.

Instruction at the undergraduate and graduate levels is offered in the following areas:

| | | |
|-----------|-------------|-------------|
| Flute | Trumpet | Violin |
| Oboe | French Horn | Viola |
| Bassoon | Trombone | Cello |
| Clarinet | Euphonium | Double Bass |
| Saxophone | Tuba | Piano |
| | Percussion | Voice |

Catalog Numbers:

The first of the four digits indicates level (i.e., 1-Freshman; 2-Sophomore; 3-Junior; 4-Senior; 5-Graduate); the second digit (1,2,3 or 4) indicates the number of semester hours credit and the minimum hours of daily practice; the third digit indicates the semester and the fourth digit is zero.

Students normally progress to the next higher level each year. Occasionally it may require more than one year of study to accomplish this progress. The progress of a student from one level of applied music to another is dependent on the jury held at the conclusion of each semester.

1000. Recital Seminar. 0(0-2)
Attend 20 concerts or recitals during the semester. Required of all music majors for seven semesters or until the student teaching experience. Credit/Non-credit.

Class Instruction

Classes are designed for the beginner in the various areas of performance. A minimum of two hours individual practice weekly is required.

1166. Woodwinds I. (MUSI 1166) 1(0-2)
Pedagogy and techniques of clarinet and saxophone.

1167. Woodwinds II. (MUSI 1167) 1(0-2)
Pedagogy and techniques of flute and double reed instruments.

1174. High Brass. 1(0-2)
Pedagogy and techniques of trumpet and French horn.

1175. Low Brass. (MUSI 1168) 1(0-2)
Pedagogy and techniques of trombone, euphonium and tuba.

1181. Piano Class. (MUSI 1181) 1(0-2)
Beginning study of piano with emphasis on functional aspects, e.g. basic techniques, scales, chords and simple transpositions.

1182. Piano Class. (MUSI 1182) 1(0-2)
Continuation of MUSI 1181.

1183. Voice Class. (MUSI 1183) 1(0-2)
The rudiments of vocal music, breathing, correct use of body muscle for breath control, diction and the development of tone will be studied. Technical development will include the study of interpretation, tone production, pronunciation and vocal expression.

1188. Percussion Class. (MUSI 1188) 1(0-2)

1189. String Class. (MUSI 1189) 1(0-2)

2181. Piano Class. (MUSI 2181) 1(0-2)
Functional piano. Continuation of MUSI 1182.

2182. Piano Class. (MUSI 2182) 1(0-2)
Continuation of MUSI 2181.

Ensembles

Ensembles perform on the campus and in various communities throughout Texas. Ensembles may serve as elective courses in any college of the university. A limited number of instruments are available to students who wish to join these groups. Credit in excess of four semesters in a single ensemble will be considered advanced.

1121. University Band. 1(0-4)
The University Band performs standard windband literature. Non-music majors are not required to audition.

1122. Concert Band. 1(0-4)
The Concert Band includes in its repertoire major contemporary works composed for the windband as well as marches and transcriptions. Prerequisite: audition.

1123. Symphony Orchestra. 1(0-3)
Highest levels of musicianship demonstrated through performance of respected orchestral literature. Prerequisite: audition.

1127. Marching Band. 1(0-6)
The *Pride of South Texas Marching Band* performs at the half-time of Texas A&M-Kingsville football games as well as selected other events. Required of all wind and percussion majors.

1131. Jazz Workshop. 1(0-3)
Performance, arranging and composition of music for the stage band in the modern jazz idiom.

1132. Chamber Music. 1(0-3)
The study, preparation and performance of small-ensemble music in like-instrument groupings, mixed-instrument ensembles and vocal ensembles.

1133. Mariachi. 1(0-3)
The study of mariachi music through instrumental and vocal performance.

1141. Choir. 1(0-4)
Required of all voice majors. Study and performance of choral literature from the Renaissance to the present.

1151. Singers. 1(0-3)
A select small mixed ensemble which performs music especially written for a vocal chamber group. Open by audition to all students.

1157. Opera Workshop. (MUSI 1157) 1(0-5)
Study and performance of scenes and acts from operas as well as full operas. Practical experience in opera production including dramatic aspects of staged music-drama. Emphasis on integration of music, acting and staging.

1159. Musical Theatre. (MUSI 1159) 1(0-5)
Study and performance of works from the musical theatre repertoire.

3120. Wind Symphony. 1(0-4)
Highest levels of musicianship are demonstrated through performance of respected windband literature. Prerequisite: audition.

3127. Advanced Marching Band. 1(0-6)
The *Pride of South Texas Marching Band* performs at the halftime of Texas A&M-Kingsville football games as well as selected other events. Leadership skills and marching band teaching techniques are stressed. Prerequisite: completion of two semester of MUSI 1127.

3131. Jazz Band I.

1(0-3)

The premiere instrumental jazz performance ensemble, Jazz Band I performs the highest level of jazz literature stressing improvisation and various styles of jazz. Prerequisite: audition.

3132. Advanced Chamber Music.

1(0-3)

The advanced study, preparation and performance of small-ensemble music in like-instrument groupings, mixed-instrument ensembles and vocal ensembles. Prerequisite: junior standing.

Degree Requirements
Bachelor of Music
Music-Instrumental with Teaching Certification

| | | | | | | | |
|-----------------------|----------|------------|----------|-------------------------|----------|------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | ENGL 1302 | 3 | EDED 3310 | 3 | MUSA 3220 | 2 |
| COMS 1311 | 3 | MATH 1314 | 3 | MUSA 3210 | 2 | MUSI 1000 | 0 |
| ENGL 1301 | 3 | MUSA 1120 | 1 | MUSI 1000 | 0 | MUSI 3120 | 1 |
| HIST 1301 | 3 | MUSI 1000 | 0 | MUSI 3127 | 1 | MUSI 3312 | 3 |
| MUSA 1110 | 1 | MUSI 1117 | 1 | MUSI 3196 | 1 | MUSI 3394 | 3 |
| MUSI 1000 | 0 | MUSI 112X | 1 | MUSI 3393 | 3 | MUSI 3397 | 3 |
| MUSI 1127 | 1 | MUSI 1182 | 1 | MUSI 4307 | 3 | MUSI 4308 | 3 |
| MUSI 1181 | 1 | MUSI 1195 | 1 | MUSI 4318 | 3 | SOCI 2361 | 3 |
| MUSI 1183 | <u>1</u> | MUSI 1317 | 3 | Sec. Inst. | <u>1</u> | Sec. Inst. | <u>1</u> |
| | 15 | Science | <u>3</u> | | 17 | | 19 |
| | | | 17 | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 or | 3 | | | EDED 3332 | 3 | EDED 4623 | 6 |
| ENGL 2362 | | MUSA 2220 | 2 | EDED 3333 | 3 | EDRG 4314 | 3 |
| HIST 1302 | 3 | MUSI 1000 | 0 | MUSA 4210 | 2 | EDSE 4391 | <u>3</u> |
| MUSA 2210 | 2 | MUSI 112X | 1 | MUSI 1000 | 0 | | 12 |
| MUSI 1000 | 0 | MUSI 2117 | 1 | MUSI 3127 | 1 | | |
| MUSI 1127 | 1 | MUSI 2182 | 1 | MUSI 3314 | 3 | Total Hours Reqd: 133 | |
| MUSI 2116 | 1 | MUSI 2306 | 3 | <i>^Global learning</i> | 3 | | |
| MUSI 2181 | 1 | MUSI 2317 | 3 | Sec. Inst. | <u>1</u> | | |
| MUSI 2316 | 3 | PHYS 1471 | 4 | | 16 | | |
| POLS 2301 | 3 | POLS 2302 | 3 | | | | |
| Sec. Inst. | <u>1</u> | Sec. Inst. | <u>1</u> | | | | |
| | 18 | | 19 | | | | |

Degree Requirements
Bachelor of Music
Music-Vocal with Teaching Certification

| | | | | | | | |
|-----------------------|----------|--------------------------|----------|--------------------|----------|------------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ARTS 1201 | 2 | ENGL 1302 | 3 | EDED 3310 | 3 | MUSA 3220 | 2 |
| COMS 1311 | 3 | MUSA 1120 | 1 | MUSA 3210 | 2 | MUSI 1000 | 0 |
| ENGL 1301 | 3 | MUSI 1000 | 0 | MUSI 1000 | 0 | MUSI 1141 | 1 |
| HIST 1301 | 3 | MUSI 1117 | 1 | MUSI 1141 | 1 | MUSI 3312 | 3 |
| MUSA 1110 | 1 | MUSI 1141 | 1 | MUSI 1157 | 1 | MUSI 3394 | 3 |
| MUSI 1000 | 0 | MUSI 1162 | 1 | MUSI 3196 | 1 | MUSI 3397 | 3 |
| MUSI 1141 | 1 | MUSI 1182 | 1 | MUSI 3393 | 3 | MUSI 4308 | 3 |
| MUSI 1181 | 1 | MUSI 1317 | 3 | MUSI 4307 | 3 | POLS 2301 | 3 |
| MUSI 1195 | <u>1</u> | <i>^Natural sciences</i> | <u>3</u> | MUSI 4318 | 3 | Sec. Inst. | <u>1</u> |
| | 15 | | 14 | Sec. Inst. | <u>1</u> | | 19 |
| | | | | | 18 | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 or | 3 | MUSA 2220 | 2 | EDED 3332 | 3 | EDED 4623 | 6 |
| ENGL 2362 | | MUSI 1000 | 0 | EDED 3333 | 3 | EDRG 4314 | 3 |
| HIST 1302 | 3 | MUSI 1141 | 1 | MUSA 4210 | 2 | EDSE 4391 | <u>3</u> |
| MATH 1314 | 3 | MUSI 2117 | 1 | MUSI 1000 | 0 | | 12 |
| MUSA 2210 | 2 | MUSI 2182 | 1 | MUSI 1141 | 1 | | |
| MUSI 1000 | 0 | MUSI 2306 | 3 | MUSI 3314 | 3 | Total Hours Reqd: 133 | |
| MUSI 1141 | 1 | MUSI 2317 | 3 | MUSI 3302 | 3 | | |
| MUSI 2116 | 1 | PHYS 1471 | 4 | SOCI 2361 | 3 | | |
| MUSI 2181 | 1 | <i>^Global learning</i> | <u>3</u> | Sec. Inst. | <u>1</u> | | |
| MUSI 2316 | 3 | | 18 | | 19 | | |
| Sec. Inst. | <u>1</u> | | | | | | |
| | 18 | | | | | | |

^For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

**Degree Requirements
Bachelor of Music
Performance-Instrumental**

| Freshman Year | | | | Junior Year | | | |
|---------------------------------|----------|--------------|----------|------------------------------------|----------|------------------------------|----------|
| ARTS 1201 | 2 | ENGL 1302 | 3 | MUSA 3410 | 4 | MUSA 3420 | 4 |
| ENGL 1301 | 3 | HIST 1301 | 3 | MUSI 1000 | 0 | MUSI 1000 | 0 |
| MATH 1314 | 3 | MUSA 1220 | 2 | *MUSI 3120 | 1 | *MUSI 3120 | 1 |
| MUSA 1210 | 2 | MUSI 1000 | 0 | MUSI 3131 or | 1 | MUSI 3131 or | 1 |
| MUSI 1000 | 0 | MUSI 1117 | 1 | MUSI 3132 | | MUSI 3132 | |
| *MUSI 112X | 1 | *MUSI 112X | 1 | MUSI 3196 | 1 | MUSI 3312 | 3 |
| MUSI 1131 or | 1 | MUSI 1131 or | 1 | MUSI 4307 | 3 | MUSI 3397 | 3 |
| MUSI 1132 | | MUSI 1132 | | MUSI 4318 | 3 | MUSI 4308 | <u>3</u> |
| MUSI 1181 | 1 | MUSI 1182 | 1 | [^] Literature/philosophy | <u>3</u> | | 15 |
| [^] Oral communication | <u>3</u> | MUSI 1317 | <u>3</u> | | 16 | | |
| | 16 | | 15 | | | | |
| Sophomore Year | | | | Senior Year | | | |
| HIST 1302 | 3 | MUSA 2220 | 2 | MUSA 4410 | 4 | MUSA 4420 | 4 |
| MUSA 2210 | 2 | MUSI 1000 | 0 | MUSI 1000 | 0 | MUSI 1000 | 0 |
| MUSI 1000 | 0 | *MUSI 112X | 1 | *MUSI 3120 | 1 | *MUSI 3120 | 1 |
| MUSI 1131 or | 1 | MUSI 1131 or | 1 | MUSI 3131 or | 1 | MUSI 3131 or | 1 |
| MUSI 1132 | | MUSI 1132 | | MUSI 3132 | | MUSI 3132 | |
| MUSI 2116 | 1 | MUSI 2117 | 1 | MUSI 3314 | 3 | MUSI 4319 | 3 |
| MUSI 2181 | 1 | MUSI 2182 | 1 | POLS 2301 | 3 | POLS 2302 | 3 |
| MUSI 2316 | 3 | MUSI 2306 | 3 | [^] Social/behavioral | <u>3</u> | [^] Global learning | <u>3</u> |
| [^] Natural sciences | <u>3</u> | MUSI 2317 | 3 | | 15 | | 15 |
| | 15 | PHYS 1471 | <u>4</u> | | | | |
| | | | 16 | | | | |

Total Hours Reqd: 123

*Keyboard majors may substitute MUSI 1141 for MUSI 3120, MUSI 1121 or MUSI 1122.

**Degree Requirements
Bachelor of Music
Performance-Voice**

| Freshman Year | | | | Junior Year | | | |
|---------------------------------|----------|--------------|----------|--------------------------------|----------|------------------------------|----------|
| ARTS 1201 | 2 | ENGL 1302 | 3 | MUSA 3410 | 4 | MUSA 3420 | 4 |
| ENGL 1301 | 3 | HIST 1301 | 3 | MUSI 1000 | 0 | MUSI 1000 | 0 |
| MATH 1314 | 3 | MUSA 1220 | 2 | MUSI 1141 | 1 | MUSI 1141 | 1 |
| MUSA 1210 | 2 | MUSI 1000 | 0 | MUSI 1151 | 1 | MUSI 1151 or | 1 |
| MUSI 1000 | 0 | MUSI 1117 | 1 | or MUSI 1157 | | MUSI 1157 | |
| MUSI 1141 | 1 | MUSI 1141 | 1 | MUSI 3196 | 1 | MUSI 3312 | 3 |
| MUSI 1181 | 1 | MUSI 1162 | 1 | MUSI 4307 | 3 | MUSI 3397 | 3 |
| [^] Foreign Language | <u>3</u> | MUSI 1182 | 1 | MUSI 4318 | 3 | MUSI 4308 | <u>3</u> |
| | 15 | MUSI 1317 | <u>3</u> | [^] Natural sciences | <u>3</u> | | 15 |
| | | | 15 | | 16 | | |
| Sophomore Year | | | | Senior Year | | | |
| HIST 1302 | 3 | MUSA 2220 | 2 | MUSA 4410 | 4 | MUSI 1000 | 0 |
| MUSA 2210 | 2 | MUSI 1000 | 0 | MUSI 1000 | 0 | MUSI 1141 | 1 |
| MUSI 1000 | 0 | MUSI 1141 | 1 | MUSI 1141 | 1 | MUSI 1151 or | 1 |
| MUSI 1141 | 1 | MUSI 1151 or | 1 | MUSI 1151 or | 1 | MUSI 1157 | |
| MUSI 1151 or | 1 | MUSI 1157 | | MUSI 1157 | | MUSI 4319 | 3 |
| MUSI 1157 | | MUSI 2117 | 1 | MUSI 3314 | 3 | MUSA 4420 | 4 |
| MUSI 2116 | 1 | MUSI 2182 | 1 | POLS 2301 | 3 | POLS 2302 | 3 |
| MUSI 2181 | 1 | MUSI 2306 | 3 | [^] Social/behavioral | <u>3</u> | [^] Global learning | <u>3</u> |
| MUSI 2316 | 3 | MUSI 2317 | 3 | | 15 | | 15 |
| [^] Oral communication | <u>3</u> | PHYS 1471 | <u>4</u> | | | | |
| | 15 | | 16 | | | | |

Total Hours Reqd: 122

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

DEPARTMENT OF PHYSICS AND GEOSCIENCES

Lionel D. Hewett, *Chair*

Hill Hall 113. MSC 175. Extension 2618.

Regents Professor

Norwine

Professors

Cox, Gandy, Hewett, McGehee

Associate Professors

Kinnison, Yu

Assistant Professor

Butterworth

Lecturers

Buckley, Jackson

The Department of Physics and Geosciences serves the needs of three types of students: those majoring or minoring in geography, geology or physics; technical or pre-professional students; and students who take physics and geoscience courses out of interest or to satisfy science requirements. The department seeks to prepare students who are majoring or minoring in geography, geology or physics to successfully pursue a graduate degree in that or a related field, compete with graduates from other institutions for industrial and governmental positions or follow a career in science education. It does this through its specialized programs in nuclear and health physics, geographic information sciences (GIS), geological and physical modeling, engineering physics, broadcast meteorology and astronomy. For students in technical areas, the department endeavors to provide the background necessary for success in their chosen profession. For non-technical majors, the department strives to enlighten students concerning some of the basic realities of our universe and to instill in them an appreciation of the methods of scientific inquiry and the impact of science on our modern world.

Students majoring in the Department of Physics and Geosciences should plan the course work for their minor so that it will best support their career and educational goals. This should be done in consultation with their department adviser.

GEOGRAPHY (GEOG)

1101. Physical Geography: Meteorology Laboratory.

1(0-2)

A laboratory experience that focuses on laboratory techniques, data collection and analysis. The experience reinforces and promotes greater understanding of concepts of meteorology presented in GEOG 1301. Prerequisite or corequisite: GEOG 1301.

1102. Physical Geography: Climate and Mankind Laboratory.

1(0-2)

A laboratory experience that focuses on laboratory techniques, data collection and analysis. The experience reinforces and promotes greater understanding of concepts of climatology and its effect on human civilization, as presented in GEOG 1302. Prerequisite or corequisite: GEOG 1302.

1301. Physical Geography: Meteorology. (GEOG 1301)

3(3-0)

Earth motions and their meanings; system of location and time; composition and structure of the earth's atmosphere. Meteorology and weather prediction, including storms. Air pollution meteorology. Field trips will be arranged.

1302. Physical Geography: Climate and Mankind. (GEOG 1302)

3(3-0)

Climatic classification, types and world regions. Climatic change, fluctuations and their effects on human ecology (e.g., droughts). Agricultural and urban climatology. Microclimates. The distribution of soils and natural vegetation as related to climate. Field trips will be arranged.

1303. World Geography. (GEOG 1303)

3(3-0)

Major geographic regions of the world. Landscapes and peoples of continents; major culture realms and nations, resources, land-use and industries. Contrasts between developed and emerging nations.

2472. (Formerly GEOG 4425). Introduction to Geographic Information Systems. 4(3-3)
Principles and experience of Geographic Information Systems. Acquisition, management, processing and interpretation of geographic data. Spatial data structure and the display, manipulation and analysis of geographic data. Prerequisite: 3 hours of natural science or permission of instructor.

3302. Introduction to Broadcast Meteorology. 3(3-0)
Principles and practice of broadcast meteorology, a joint effort of the Department of Physics and Geosciences and Department of Communication and Theatre Arts. Introduction to television weather broadcasting with emphasis on creating accurate forecasts and on the techniques of communicating weather information to the public. Prerequisites: GEOG 1301 with GEOG 1302 recommended.

3305. Environmental Geography. 3(3-0)
The nature, geographic distribution, use and misuse of global resources with emphasis on those of North America. Ecosystems, air, water, soil, mineral and energy resources will be considered. Prerequisites: 3 semester credit hours of Geography or a science course (see General Education Requirements *Natural sciences* component).

3310. The World in Change: Crucial Topics in Contemporary Geography. 3(3-0)
Intensive study of the geography of selected world "crisis" regions. Examples include the Middle East, Sub-Saharan Africa and the former U.S.S.R. and Eastern Europe. May be repeated for credit as the topic changes. Prerequisite: 6 semester hours of geography or 12 semester hours of social sciences.

3331. United States and Canada. 3(3-0)
The regional aspects of landforms, climate, resources and peoples of United States and Canada. Prerequisite: 6 hours of geography or 12 hours of social science.

3421. Geomorphology. 4(3-3)
Description, classification and quantitative analysis of landforms and surface processes in relation to human development. Regional physiography of the United States and topographic map interpretation. May be used as geology credit. Field trip will be arranged. Prerequisite: GEOL 1302/GEOL 1102 or GEOL 1303/GEOL 1103, MATH 1316.

3450. Field Mapping, Cartography and Global Positioning. 4(3-3)
The principles and practice of plane surveying and the global positioning system (GPS) and their interface with geographic information systems (GIS). Basic principles of cartography and use of cartographic tools and software. Management of cartographic data and GPS data. Local field trips will be arranged. Prerequisite: MATH 1314 and MATH 1316 or MATH 1324.

4420. Special Topics in Geoscience. V:1-4
Concepts, developments or discoveries in geography. May be repeated for a maximum of six semester hours credit. Prerequisite: 12 semester hours of geography and/or geology.

4429. Advanced Geographic Information Systems. 4(3-3)
Advanced techniques and applications of Geographic Information Systems. GIS data structure and conversions, advanced spatial analysis, data visualization, hydrological modeling. Basic and intermediate GIS programming for customizing and manipulating GIS applications. May be used as a geology credit. Prerequisite: GEOG 2472 or GEOG 3450 or GEOL 3407 or permission of instructor.

4435. Remote Sensing. 4(3-3)
The technology and interpretation of aerial photography and satellite imagery, including multi-spectral, thermal and radar images. Digital image processing using a raster geographic information system. Applications of remote sensing and guided projects in areas of student interest. May be used as a geology credit. Prerequisite: MATH 1314 and 6 hours of science, engineering or agriculture.

GEOLOGY (GEOL)

1101. Earth Science I Laboratory. 1(0-2)
A laboratory experience that focuses on laboratory techniques, data collection and analysis. Reinforces and promotes greater understanding of concepts of physical geology, geomorphology and historical geology as presented in GEOL 1301. Prerequisite: credit or registration in GEOL 1301.

- 1102. Earth Science II Laboratory.** 1(0-2)
A laboratory experience that focuses on laboratory techniques, data collection and analysis. Reinforces and promotes greater understanding of concepts of the oceans, the hydrosphere and atmosphere and astronomy as presented in GEOL 1302. Prerequisite: credit or registration in GEOL 1302.
- 1103. Physical Geology Laboratory.** (GEOL 1103) 1(0-2)
A laboratory experience that focuses on laboratory techniques, data collection and analysis. The experience reinforces and promotes greater understanding of earth materials and the physical processes at work on and in the earth. Prerequisite or corequisite: GEOL 1303.
- 1104. Historical Geology Laboratory.** (GEOL 1104) 1(0-2)
A laboratory experience that focuses on laboratory techniques, data collection and analysis. The experience reinforces and promotes greater understanding of the events and processes that have shaped the earth and influenced the development of life through time. Prerequisite or corequisite: GEOL 1304.
- 1301. Earth Science I.** (GEOL 1301) 3(3-0)
Introduction to principles and methods of earth science. Nature of the earth as revealed by concepts of physical geology, geomorphology and historical geology. Field trips may be arranged. Designed for students not majoring in science or engineering.
- 1302. Earth Science II.** (GEOL 1302) 3(3-0)
Survey of earth's dynamic systems: the oceans, the hydrosphere and the atmosphere. Survey of astronomy emphasizing earth's place in the universe. Field trips may be arranged. Designed for students not majoring in science or engineering. Open to geosciences majors.
- 1303. Physical Geology.** (GEOL 1303) 3(3-0)
General composition and form of the earth's surface and the volcanic, erosional, depositional and deformational processes which operate on it. The properties of the interior of the earth inferred from earthquakes and other external evidence. Occasional field trips may be arranged.
- 1304. Historical Geology.** (GEOL 1304 or GEOL 1404) 3(3-0)
The important change through which the earth has passed since its origin as a planet; especially, the history of the orderly evolution of life and physical features evidenced in the rocks of the earth. Occasional field trips may be arranged. Prerequisite: GEOL 1303.
- 2376. Nature of the Earth and Universe.** 3(3-2)
Survey of the basic concepts of geosciences. This course begins with an introduction to astronomy and the Earth's position in our solar system. The course includes the interrelationships between the solid portion, hydrosphere, atmosphere and biosphere of the Earth. Prerequisite: BIOL 2375, CHEM 1376.
- 3305. Environmental Geology.** 3(3-0)
The relationship between humans and their geologic environment. Reviews and builds on principles of physical geology to understand the geology of the present, as distinct from that of the distant past. Relevant examples from South Texas environmental geologic research are included. Prerequisite: GEOL 1303 or permission of instructor.
- 3407. Field Geology.** 4(3-3)
Geologic mapping on topographic maps and aerial photographs. Interpretation of field relationships. Basic topographic surveying methods and measurements using the Global Positioning System (GPS). Two weekend field trips required, including geologic mapping in the field and written reports. Other problems simulated in the laboratory. Prerequisite: GEOL 1304/GEOL 1104.
- 3409. Mineralogy.** 4(3-3)
Morphological crystallography and symmetry concepts. Methods of identification of minerals by their physical and chemical properties. Origin of economic minerals and ore deposits. Geological significance of common rock-forming minerals. One weekend field trip required. Prerequisites: GEOL 1303/GEOL 1103 and 3 hours of chemistry.

- 3411. Petrology.** 4(3-3)
Classification and origin of igneous, sedimentary and metamorphic rocks. Laboratory emphasis on identification and interpretation of hand specimens. One weekend field trip required. Prerequisite: GEOL 3409.
- 3431. Stratigraphy and Sedimentology.** 4(3-3)
Study of the composition, environment, sequence and correlation of stratified rocks. Occasional field trips will be arranged. Prerequisites: GEOL 1303/GEOL 1103 and GEOL 1304/GEOL 1104.
- 3445. Oceanography.** 4(3-3)
Methods and principles of oceanography. The physical and chemical properties of the seas, life in the sea and a comprehensive treatment of marine geology. Saturday field trips will be arranged. Prerequisites: GEOG 1301/GEOG 1101 or GEOL 1303/GEOL 1103 or GEOL 1301/GEOL 1101. May be used for geography credit.
- 3481. Structural Geology.** 4(3-3)
The inherent and imposed structures in rocks and their modes of formation. Mechanical principles of rock deformation, petrofabrics, regional structural interpretation, theories of mountain building and geotectonics. Prerequisites: GEOL 1303/GEOL 1103 and GEOL 1304/GEOL 1104.
- 4107. Applied Geology Laboratory.** 1(0-3)
Laboratory course to accompany GEOL 4307. Field and laboratory applications of geological concepts in solving geological engineering problems. Study of engineering principles and properties of earth materials. Exploration of engineering design and methods of site investigations. Prerequisite: registration or credit in GEOL 4307.
- 4307. Applied Geology.** 3(3-0)
Applications of geological concepts in solving geological engineering problems. Study of engineering principles and properties of earth materials. Exploration of engineering design and methods of site investigations. Prerequisites: GEOL 1303, MATH 1316, CHEM 1111/CHEM 1311.
- 4325. Aqueous Geochemistry.** 3(3-1)
Introduces the processes controlling the chemical composition of surface and groundwater. Prerequisites: GEOL 1303/GEOL 1103, CHEM 1111, CHEM 1112, CHEM 1311 and CHEM 1312.
- 4395. Special Problems.** V:1-3
Supervised individual research of a geological problem that meets the needs and interest of the student. May be repeated for a maximum of 3 semester hours credit. Prerequisite: 18 semester hours of geology prior to registration.
- 4405. Senior Research Project.** 4(3-3)
Collaborative research project involving the student and a geology faculty member, focused on a topic that requires mastery of geologic knowledge appropriate to the student's plans for a professional career or advanced study in the field. Prerequisite: senior standing in geology. Activity fee, \$10.
- 4417. Summer Field Course I.** 4(3-V)
A summer term program covering geologic field methods and techniques. Includes the use and maintenance of field equipment, measurement, description and interpretation of stratigraphic sections, identification and interpretation of field relations of sedimentary rocks and preparation of geological field reports. Classwork six days per week. Simultaneous enrollment in GEOL 4418 is mandatory. Prerequisites: GEOL 3411, GEOL 3431, GEOL 3407 and GEOL 3481. Special Field Course Fee required.
- 4418. Summer Field Course II.** 4(3-V)
A summer term program covering geologic field methods and techniques. Includes the identification and interpretation of field relations of igneous and metamorphic rocks; geologic mapping on topographic, aerial-photo and plane-table base; and preparation of geological field reports. Classwork six days per week. Simultaneous enrollment in GEOL 4417 is mandatory. Prerequisites: GEOL 3411, GEOL 3431, GEOL 3407 and GEOL 3481. Special Field Course Fee is required.
- 4420. Special Topics in Geoscience.** 4(3-3)
One or more important concepts, developments or discoveries in geology. May be repeated once for credit. Prerequisite: 12 semester hours of geography and/or geology.

4425. Hydrogeology. 4(3-2)
Principles of fluid, mass and energy transport in geologic formations are emphasized to handle human affair problems such as water supply, contamination and energy resources. Prerequisite: GEOL 1303/GEOL 1103 and GEOL 1304/GEOL 1104.

PHYSICS (PHYS)

1101. College Physics I Laboratory. (PHYS 1101) 1(0-4)
A laboratory course to accompany PHYS 1301. Prerequisite: credit or registration in PHYS 1301.

1102. College Physics II Laboratory. (PHYS 1102) 1(0-4)
A laboratory course to accompany PHYS 1302. Prerequisite: credit or registration in PHYS 1302.

1103. Stars and Galaxies Laboratory. (PHYS 1103) 1(0-3)
A laboratory course to accompany PHYS 1303. Prerequisite: credit or registration in PHYS 1303.

1104. Solar System Laboratory. (PHYS 1104) 1(0-3)
A laboratory course to accompany PHYS 1304. Prerequisite: credit or registration in PHYS 1304.

1105. Elementary Physics I Laboratory. (PHYS 1105) 1(0-2)
A laboratory course to accompany PHYS 1305. Prerequisite: credit or registration in PHYS 1305.

1107. Elementary Physics II Laboratory. (PHYS 1107) 1(0-2)
A laboratory course to accompany PHYS 1307. Prerequisite: credit or registration in PHYS 1307.

1170. Principles of Nuclear Engineering. 1(1-0)
Introduction to nuclear engineering including global and national energy requirements, radioactivity, radiation protection and fission and fusion reactor concepts.

1301. College Physics I. (PHYS 1301 or PHYS 1401) 3(3-0)
A trigonometry-based introduction to physics. Topics include kinematics, vector analysis, force dynamics, equilibrium, work, energy, momentum, collisions, fluid dynamics and thermal physics. Prior knowledge of physics (one year of high school physics; or PHYS 1305/1105; or PHYS 1375) is assumed. Prerequisites: MATH 1314 and MATH 1316. Concurrent enrollment in PHYS 1101 is recommended.

1302. College Physics II. (PHYS 1302 or PHYS 1402) 3(3-0)
A continuation of PHYS 1301. Topics include periodic motion, sound, electric force, electric current, resistance, electric circuits, magnetism, electromagnetic induction, AC circuits, light and optics. Prerequisite: PHYS 1301 and PHYS 1101. Concurrent enrollment in PHYS 1102 is recommended.

1303. Stars and Galaxies. (PHYS 1303, PHYS 1403) 3(3-0)
A survey of stellar astronomy and cosmology. Topics include the behavior of light; the sun as a star; positions, motions and brightness of the stars; stellar evolution; the Milky Way and other galaxies; and cosmology. Concurrent enrollment in PHYS 1103 is recommended.

1304. Solar System. (PHYS 1304 or PHYS 1404) 3(3-0)
A survey of the astronomy of our solar system. Topics include the history of astronomy, naked-eye phenomena, telescopes, gravity and orbits and the nature and history of the Earth, moon, planets, asteroids and comets. Concurrent enrollment in PHYS 1104 is recommended.

1305. Elementary Physics I. (PHYS 1305 or PHYS 1405) 3(3-0)
A qualitative introduction to physics for students with little preparation in the physical sciences. Topics include kinematics, vector analysis, force dynamics, equilibrium, work, energy, momentum, collisions, fluid dynamics and thermal physics. Concurrent enrollment in PHYS 1105 is recommended.

- 1307. Elementary Physics II.** (PHYS 1307 or PHYS 1407) 3(3-0)
A qualitative introduction to physics intended for students with little preparation in the physical sciences. Topics include periodic motion, sound, electric force, electric current, resistance, electric circuits, magnetism, electromagnetic induction, AC circuits, light, optics and modern physics. Concurrent enrollment in PHYS 1107 is recommended.
- 1375. Physics.** 3(3-2)
A survey of the most basic concepts of physics. Topics include scientific measurements, motion, momentum, energy, gravitation, matter, heat, electricity, magnetism, sound, light, atomic structure and nuclear energy. Prerequisite: MATH 1314.
- 1471. The Acoustical Foundations of Music.** 4(3-2)
A general introduction and survey of the physical and acoustical foundations of music. Topics include the fundamental physics relevant to music, the reception of musical sound, intervals, scales, tuning, temperament, auditorium and room acoustics and the production of sounds by musical instruments including electronic.
- 2125. University Physics I Laboratory.** (PHYS 2125) 1(0-4)
A laboratory course to accompany PHYS 2325. Prerequisite: credit or registration in PHYS 2325.
- 2126. University Physics II Laboratory.** (PHYS 2126) 1(0-4)
A laboratory course to accompany PHYS 2326. Prerequisite: credit or registration in PHYS 2326.
- 2325. University Physics I.** (PHYS 2325 or PHYS 2425) 3(3-0)
A calculus-based introduction to physics. Topics include kinematics, vector analysis, force dynamics, equilibrium, work, energy, momentum, collisions, fluid dynamics and thermal physics. Prior knowledge of physics (one year of high school physics; or PHYS 1305/1105; or PHYS 1375) is assumed. Prerequisite: credit or registration in MATH 2413 or equivalent. Concurrent enrollment in PHYS 2125 is recommended.
- 2326. University Physics II.** (PHYS 2326 or PHYS 2426) 3(3-0)
A continuation of PHYS 2325. Topics include periodic motion, sound, electric force, electric current, resistance, electric circuits, magnetism, electromagnetic induction, light, optics and modern physics. Prerequisites: PHYS 2325 and PHYS 2125 or PHYS 1302 and PHYS 1102; credit or registration in MATH 2414 or equivalent [MATH 2314]. Concurrent enrollment in PHYS 2126 is recommended.
- 3110. Advanced Laboratory.** 1(1-3)
A laboratory course focusing on advanced techniques and experiments. Experiments will be drawn from the full range of physics classes. The student will understand the role of experimental design, advanced data analysis and reduction, and the use of computers while investigating physical phenomena. Prerequisites: PHYS 2126, PHYS 2326.
- 3313. Mechanics.** 3(3-0)
A mathematical treatment of the fundamentals of classical mechanics. Topics include particle dynamics in one, two and three dimensions; conservation laws; dynamics of a system of particles; motion of rigid bodies; central force problems; accelerating coordinate systems; gravitation; Lagrange's equations and Hamilton's equations. Prerequisites: PHYS 1301/1101 or PHYS 2325/2125; MATH 2414.
- 3323. Electromagnetic Field Theory.** 3(3-0)
A mathematical treatment of the fundamentals of classical electromagnetic theory. Topics include electrostatics and electrodynamics, vector calculus, theory of dielectrics, magnetostatic fields, electromagnetic induction, magnetic fields of currents and Maxwell's equations. Prerequisites: PHYS 2326 and PHYS 2126; credit or registration in MATH 3320 or MATH 3415 or equivalent [MATH 3315].
- 3333. Thermodynamics.** 3(3-0)
A mathematical treatment of the fundamentals of thermal physics. Topics include the concept of temperature, equations of state, the first and second laws of thermodynamics, entropy, change of phase and thermodynamic functions. Prerequisites: PHYS 2326 and PHYS 2126; credit or registration in MATH 3415 or equivalent [MATH 3315].

- 3343. Modern Physics I.** 3(3-0)
A course in special relativity and elementary quantum mechanics. Topics include space-time, relativistic energy and momentum, the uncertainty principle, Schrödinger's equation, observables and operators, bound states, potential barriers and the hydrogen atom. Prerequisites: PHYS 2326 and PHYS 2126; credit or registration in MATH 3320 or MATH 3415 or equivalent [MATH 3315].
- 3362. Introduction to Nuclear Engineering.** 3(3-0)
Basic radioactivity, nuclear and neutron physics as applied to nuclear engineering. Prerequisites: PHYS 3343; credit or registration in CSEN 2304 or equivalent; MATH 3320.
- 4191. Research in Physics.** 1(1-0)
Supervised research into advanced physics concepts. Includes, but is not limited to, literature searches. May be repeated for credit. Prerequisite: two advanced Physics courses and approval by the supervising faculty.
- 4303. Mathematical Methods of Physics.** 3(3-0)
A course presenting mathematical techniques used in physics and engineering. The course will survey, at a brief introductory level and from a physics-oriented perspective, numerous mathematical techniques from areas such as infinite series, integral transforming, applications of complex variables, matrices and tensors, special functions, partial differential equations, Green's functions, perturbation theory, integral equations, calculus of variations and groups and group representations. Prerequisites: MATH 3415 or MATH 3320; 3 hours of advanced physics.
- 4323. Optics.** 3(3-0)
A mathematical treatment of the modern theory of optics. Topics include Huygen's principle as applied to geometric optics, interference, diffraction, polarization, crystal optics, electromagnetic theory of light, the interaction of light with matter and quantum optics. Prerequisites: PHYS 3323; MATH 3415 or MATH 3320.
- 4343. Modern Physics II.** 3(3-0)
A continuation of Modern Physics I. Topics include atomic, molecular, nuclear, statistical, solid state, laser and elementary particle physics. Prerequisites: PHYS 3343; MATH 3415 or MATH 3320.
- 4353. Quantum Theory.** 3(3-0)
A mathematical treatment of quantized physical phenomena. Topics include the wave theory of matter, the principle of superposition, probability, expectation values, coordinate representation, momentum representation, indeterminacy, Hermitian operators, angular momentum and spin. Quantum solutions for simple barriers, potential wells, the harmonic oscillator and the hydrogen atom are presented. Prerequisites: PHYS 3343, MATH 3415 and MATH 3320.
- 4362. Radiological Safety.** 3(3-0)
Interactions of nuclear radiations with matter and biological systems. Theory and practice of radiation dosimetry as applied to radiation protection. Design and application of radiation dosimetry systems for personnel monitoring, area radiation monitoring and accident situations. Includes external and internal dosimetry as well as long-term risk analysis. Prerequisite: PHYS 3362.
- 4363. Environmental Nuclear Engineering.** 3(3-0)
Environmental aspects of nuclear power. Natural radiation environment and the distribution of radioactivity added to the environment by human activities. Evaluation of effects of radiation and radioactivity on the environment and on humans. Prerequisite: PHYS 4362.
- 4364. Radiation Protection Engineering.** 3(3-0)
Analysis of radiation hazard situations and design of nuclear facilities from a safety standpoint. Prerequisite: PHYS 4362.
- 4366. Nuclear Reactor Theory.** 3(3-0)
An introduction to neutron diffusion theory, neutron moderation, condition for criticality of nuclear reactors. Prerequisite: PHYS 3362.
- 4367. Nuclear Reactor Analysis.** 3(3-0)
The group diffusion method, multiregion reactors, heterogeneous reactors, reactor kinetics, changes in reactivity. Prerequisite: PHYS 4366.

4370. Geophysics. 3(3-0)
Fundamentals of the mechanics of geophysics. Study of the instruments and methods used in geophysical exploration. Prerequisite: 6 semester hours of advanced physics and/or engineering.

4383. Computational Physics. 3(3-0)
An introduction to the methods and algorithms used in solving physical problems with computers, and computer-related limitations on such solutions. Prerequisites: knowledge of the C programming language; credit or registration in MATH 3320 or MATH 3415.

4390. Selected Topics in Modern Physics. 3(3-0)
A detailed study of one or more important physical discoveries, developments and/or theories. Course may be repeated for credit. Prerequisite: senior standing.

4391. Research Projects in Physics. 3(3-0)
Supervised research involving advanced physics concepts. May be repeated for a maximum of 6 semester hours. Includes, but is not limited to, experimental techniques and/or theoretical tools. Prerequisites: two advanced Physics courses and approval by the supervising faculty.

4460. Nuclear Physics. 4(3-4)
A study of natural and artificial radioactivity. Topics include the neutron, the positron, nuclear structure and forces, binding energies, nuclear fission and fusion, particle accelerators and cosmic rays. Prerequisite: PHYS 3343.

**Degree Requirements
Bachelor of Science
Geology**

| | | | | | | | |
|-------------------------------------|----------|--------------------------------|----------|---------------------|----------|-------------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | ENGL 1302 | 3 | GEOG 3421 | 4 | GEOL 3407/ GEOG 3450 | 4 |
| ENGL 1301 | 3 | GEOL 1304/1104 | 4 | GEOL 3409 | 4 | GEOL 3411 | 4 |
| GEOL 1303/1103 | 4 | HIST 1302 | 3 | GEOL 3481 | 4 | GEOL 3431 | 4 |
| HIST 1301 | 3 | MATH 2413 | <u>4</u> | Minor | <u>3</u> | +Minor | <u>3</u> |
| [^] Visual/performing arts | <u>3</u> | | 14 | | 15 | | 15 |
| | 15 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| PHYS 2325/2125 | 4 | CHEM 1311/1111 | 4 | GEOL 4417 | 4 | GEOG 4435 | 4 |
| POLS 2301 | 3 | POLS 2302 | 3 | GEOL 4418 | <u>4</u> | GEOL, adv. | 4 |
| [^] Literature/philosophy | 3 | [^] Global learning | 3 | | 8 | +Minor, adv. | 3 |
| [^] Oral communication | <u>3</u> | [^] Social/behavioral | <u>3</u> | +Minor or Elective+ | <u>3</u> | +Minor, adv. | <u>3</u> |
| | 13 | | 13 | | 13 | | 14 |

Total Hours Req'd: 120

+Or any other mathematics, natural science, engineering or computer science course, provided a recognized minor is completed. Courses in other supporting areas may also be substituted with departmental approval. Non-advanced courses may be substituted for those marked "adv." provided the student will otherwise complete 45 advanced hours including those required in a minor.

+2 SCH of elective(s) may be substituted for 3 SCH in the minor, provided a minor of 18 SCH will otherwise be completed.

**Degree Requirements
Bachelor of Science
Geology
(Concentration in Geosciences)**

| | | | | | | | |
|-------------------------------------|----------|---------------------------------|----------|--------------------|----------|--------------|----------|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | CHEM 1311/1111 | 4 | GEOG 3421 | 4 | GEOG 3305 | 3 |
| ENGL 1301 | 3 | ENGL 1302 | 3 | GEOL 3450 | 4 | GEOL 3431 | 4 |
| GEOL 1303/1103 | 4 | GEOL 1302/1102 | 4 | +Minor | 3 | GEOL 3445 | 4 |
| MATH 2413 | 3 | GEOL 1304/1104 | 4 | +Minor | <u>3</u> | +Minor | <u>3</u> |
| [^] Visual/performing arts | <u>3</u> | MATH 1348* | <u>3</u> | | 14 | | 14 |
| | 16 | | 15 | | | | |
| Sophomore Year | | | | Senior Year | | | |
| HIST 1301 | 3 | GEOG 1301/1101 | 4 | GEOG 4429 | 4 | GEOG 4435 | 4 |
| *PHYS 1301/1101 | 4 | HIST 1302 | 3 | GEOL/GEOG, adv. | 4 | GEOL 4405 | 4 |
| POLS 2301 | 3 | POLS 2302 | 3 | +Minor | 3 | GEOL 4425 | 4 |
| [^] Literature/philosophy | 3 | [^] Global learning | 3 | +Minor, adv. | <u>3</u> | +Minor, adv. | <u>3</u> |
| [^] Social/behavioral | <u>3</u> | [^] Oral communication | <u>3</u> | | 14 | | 15 |
| | 16 | | 16 | | | | |

Total Hours Req'd: 120

*Or PHYS 2325/2125. Required for a physics minor; recommended for those interested in geophysics.

+Or any other mathematics, natural science, engineering or computer science course, provided a recognized minor is completed. Courses in other supporting areas may also be substituted with departmental approval. Non-advanced courses may be substituted for those marked "adv." provided the student will otherwise complete 45 advanced hours including those required in a minor.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

**Degree Requirements
Bachelor of Science
Geology with Teaching Certification (Science 8-12)**

| Freshman Year | | | | Junior Year | | | |
|-------------------------------------|----------|------------------------------------|----------|----------------|----------|--------------------|----------|
| BIOL 1201 | 2 | BIOL 1306/1106 | 4 | CHEM 1312/1112 | 4 | EDED 3302 | 3 |
| ENGL 1301 | 3 | ENGL 1302 | 3 | EDED 3310 | 3 | EDED 3333 | 3 |
| GEOL 1303/1103 | 4 | GEOL 1304/1104 | 4 | GEOG 3421 | 4 | GEOL 3407 | 4 |
| HIST 1301 | 3 | HIST 1302 | 3 | GEOL 3409 | 4 | GEOL 3431 | 4 |
| MATH 1316* | <u>3</u> | MATH 1348* | <u>3</u> | | 15 | PHYS 1302/1102** | <u>4</u> |
| | 15 | | 17 | | | | 18 |
| Sophomore Year | | | | Senior Year | | | |
| BIOL 1307/1107 | 4 | CHEM 1311/1111 | 4 | EDED 3332 | 3 | EDED 4623 | 6 |
| GEOG 1303 | 3 | COMS 1311 | 3 | EDED 3362 | 3 | EDRG 4314 | 3 |
| PHYS 1301/1101** | 4 | POLS 2302 | 3 | GEOG 1301/1101 | 4 | EDSE 4391 | <u>3</u> |
| POLS 2301 | 3 | SOCI 2361 | 3 | GEOL 3481 | <u>4</u> | | 12 |
| [^] Visual/performing arts | <u>3</u> | [^] Literature/philosophy | <u>3</u> | | 14 | | |
| | 17 | | 16 | | | Total Hours Req'd: | 124 |

*Or any more advanced MATH course.

**Or PHYS 2325/2125 and PHYS 2326/2126, if MATH 2413 and MATH 2414 are included. Recommended for those interested in geophysics.

**Degree Requirements
Bachelor of Arts
Physics**

| Freshman Year | | | | Junior Year | | | |
|-------------------------------------|----------|---------------------------------|----------|--------------|----------|--------------------|----------|
| BIOL 1201 | 2 | ENGL 1302 | 3 | MATH 3415 | 4 | MATH 3320 | 3 |
| ENGL 1301 | 3 | MATH 2414 | 4 | PHYS 3333 | 3 | PHYS 3110 | 1 |
| MATH 2413 | 4 | [^] Oral communication | 3 | PHYS 3343 | 3 | Minor+ | 3 |
| [^] Visual/performing arts | 3 | [^] Social/behavioral | 3 | Minor+ | 3 | Minor, adv.+ | 3 |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | Minor+ | <u>3</u> | PHYS, adv. | <u>3</u> |
| | 15 | | 16 | | 16 | | 13 |
| Sophomore Year | | | | Senior Year | | | |
| HIST 1301 | 3 | HIST 1302 | 3 | PHYS 3313 | 3 | PHYS 4391* | 3 |
| PHYS 2325/2125 | 4 | PHYS 2326/2126 | 4 | PHYS 3323 | 3 | Elective, adv. | 3 |
| POLS 2301 | 3 | POLS 2302 | 3 | PHYS 4191 | 1 | Elective, adv. | 3 |
| [^] Literature/philosophy | 3 | [^] Global learning | 3 | Elective | 3 | Minor, adv.+ | 3 |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | Minor, adv.+ | <u>3</u> | PHYS, adv. | <u>3</u> |
| | 16 | | 16 | | 13 | | 15 |
| | | | | | | Total Hours Req'd: | 120 |

+Or any other mathematics, natural science, engineering or computer science course, provided a recognized minor is completed. Courses in other supporting areas may also be substituted with departmental approval. Non-advanced courses may be substituted for those marked "adv." provided the student will otherwise complete 45 advanced hours including those required in a minor.

*A double major or two-degree candidate may, with departmental approval, substitute a senior-project course in another field.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

**Degree Requirements
Bachelor of Science
Physics**

| | | | | | | | |
|---------------------------------|----|-------------------------------------|----|--------------------|----|----------------|----|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | ENGL 1302 | 3 | PHYS 3313 | 3 | PHYS 3110 | 1 |
| ENGL 1301 | 3 | HIST 1302 | 3 | PHYS 3323 | 3 | Elective | 3 |
| HIST 1301 | 3 | MATH 2414 | 4 | Elective | 3 | Minor+ | 3 |
| MATH 2413 | 4 | PHYS 2326/2126 | 4 | Minor+ | 3 | Minor+ | 3 |
| PHYS 2325/2125 | 4 | | 14 | Minor+ | 3 | PHYS, adv. | 3 |
| | 16 | | | | 15 | PHYS, adv.+ | 3 |
| | | | | | | | 16 |
| Sophomore Year | | | | Senior Year | | | |
| MATH 3415 | 4 | MATH 3320 | 3 | PHYS 3333 | 3 | PHYS 4353 | 3 |
| PHYS 3343 | 3 | POLS 2302 | 3 | PHYS 4191 | 1 | PHYS 4391* | 3 |
| POLS 2301 | 3 | [^] Global learning | 3 | Elective | 3 | Elective, adv. | 3 |
| [^] Oral communication | 3 | [^] Literature/philosophy | 3 | Elective | 3 | Minor, adv.+ | 3 |
| [^] Social/behavioral | 3 | [^] Visual/performing arts | 3 | Minor, adv.+ | 3 | PHYS, adv.+ | 3 |
| | 16 | | 15 | | 13 | | 15 |

Total Hours Reqd: 120

+Or any other mathematics, natural science, engineering or computer science course, provided a recognized minor is completed. Courses in other supporting areas may also be substituted with departmental approval. Non-advanced courses may be substituted for those marked "adv." provided the student will otherwise complete 45 advanced hours including those required in a minor.

*A double major or two-degree candidate may, with departmental approval, substitute a senior-project course in another field.

**Degree Requirements
Bachelor of Science
Physics with Teaching Certification (Science 8-12 Emphasis)**

| | | | | | | | |
|------------------------------------|----|-------------------------------------|----|--------------------|----|----------------|----|
| Freshman Year | | | | Junior Year | | | |
| BIOL 1201 | 2 | ENGL 1302 | 3 | EDED 3310 | 3 | BIOL 1306/1106 | 4 |
| ENGL 1301 | 3 | HIST 1302 | 3 | GEOL 1304/1104 | 4 | EDED 3302 | 3 |
| HIST 1301 | 3 | MATH 2414 | 4 | MATH 3415 | 4 | EDED 3333 | 3 |
| MATH 2413 | 4 | PHYS 2326/2126 | 4 | PHYS 3333 | 3 | MATH 3320 | 3 |
| PHYS 2325/2125 | 4 | [^] Visual/performing arts | 3 | PHYS 3343 | 3 | PHYS 3110 | 1 |
| | 16 | | 17 | | 17 | PHYS 4353 | 3 |
| | | | | | | | 17 |
| Sophomore Year | | | | Senior Year | | | |
| CHEM 1311/1111 | 4 | CHEM 1312/1112 | 4 | BIOL 1307/1107 | 4 | EDED 4623 | 6 |
| COMS 1311 | 3 | GEOL 1303/1103 | 4 | EDED 3332 | 3 | EDRG 4314 | 3 |
| POLS 2301 | 3 | POLS 2302 | 3 | EDED 3362 | 3 | EDSE 4391 | 3 |
| SOCI 2361 | 3 | [^] Global learning | 3 | PHYS 3313 | 3 | | 12 |
| [^] Literature/philosophy | 3 | | 14 | PHYS 3323 | 3 | | |
| | 16 | | | | 16 | | |

Total Hours Reqd: 125

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

DEPARTMENT OF POLITICAL SCIENCE (POLS)

Matthew Price, *Chair*

Rhode Hall 330. MSC 165. Extension 3501.

Professors

Carranza, Goswami, Hartwig, Hy, Mattingly, Phaup, Price

Lecturer

Cardona

A Political Science (POLS) major provides a broad, liberal arts education for students with the following career objectives: 1) law school; 2) graduate school; 3) a wide range of local, state and national government jobs; 4) international positions; 5) employment in the private sector (which also deals with public policy, government and politics) and 6) high school teaching. A POLS major requires 30 semester credit hours; a POLS minor requires 18 semester credit hours.

The department has a communication skills requirement for graduation. Students must contact their department for communication skills requirement.

2301. The Government and Politics of the United States. (GOVT 2302) (GOVT 2305) 3(3-0)

A survey of the structures, functions and processes of the political system of the United States. Fulfills 3 semester hours of the legislative degree requirement of 6 hours.

2302. The Government and Politics of Texas. (GOVT 2301) (GOVT 2306) 3(3-0)

A survey of the structures, functions and processes of the Texas political system. Fulfills 3 semester hours of the legislative degree requirements of 6 hours.

2304. Introduction to Political Science. (GOVT 2304) 3(3-0)

Development of political science as an academic discipline; the scientific method; major research approaches to the study of political phenomena with emphasis upon the contributions of behaviorialists, policy scientists and traditional political scientists.

2340. World Politics. 3(3-0)

Analysis of the contemporary state system and forces shaping the world in which we live. Students will be given a framework within which to analyze global political issues and international institutions and their impact on American politics and government.

3302. Research and Analysis in Political Science. 3(3-0)

The practice of political science. The construction of research designs; major research tools; methods of political analysis; political science writing. Prerequisite: 6 semester hours of Political Science.

4311. Voting Behavior and Public Opinion. 3(3-0)

The relation of public opinion and voting behavior to democratic government; techniques employed in analyzing political attitudes and voting behavior. Prerequisite: 6 semester hours of Political Science.

4312. Interest Groups and Political Parties. 3(3-0)

Formation, structure and functions of interest groups and political parties within the political system. Prerequisite: 6 semester hours of Political Science.

4313. The President and Congress. 3(3-0)

Structure, functions and policy roles of the national executive and legislative branches of government. Prerequisite: 6 semester hours of Political Science.

4314. State and Local Government and Administration. 3(3-0)

Structure and functions of governmental institutions; administrative practices of state and local governments. Prerequisite: 6 semester hours of Political Science.

- 4315. Urban Politics.** 3(3-0)
A study of urban political processes and major public problems confronting urban areas. Prerequisite: 6 semester hours of Political Science.
- 4317. Nuclear Proliferation and U.S. Non-Proliferation Policies.** 3(3-0)
Causes of and U.S. responses to, nuclear proliferation in Third World regions, focusing on "problem countries." Topics include the non-proliferation regime, the "nuclear repentants," nuclear arms control and the threat of nuclear terrorism. Prerequisite: 6 semester hours of Political Science or consent of instructor.
- 4321. Political Theory: Ancient and Medieval.** 3(3-0)
The theories of the major thinkers of the periods and of their development. Prerequisite: 6 semester hours of Political Science.
- 4322. Political Theory: Early Modern and Modern.** 3(3-0)
Theories of the major thinkers and the related intellectual and political movements. Prerequisite: 6 semester hours of Political Science.
- 4324. Technology and Society.** 3(3-0)
A study of technology and society from the perspective of social values, ethics, sociology, social environment, politics and economics. Prerequisite: 6 semester hours of Political Science and six semester hours of History.
- 4331. Constitutional Law I.** 3(3-0)
A survey of American constitutional law, using leading cases, both historic and contemporary, of the Supreme Court of the United States. Establishment of the federal political system for which the Constitution provided and the judicial allocations of political and economic power within that system. Prerequisite: 6 semester hours of Political Science. Credit may not be obtained in both POLS 4331 and CRIM 4331.
- 4332. Constitutional Law II.** 3(3-0)
A survey of American constitutional law using leading cases, both historic and contemporary, of the Supreme Court of the United States. Matters of rights and liberties, their recognition and definition, policies of rights developed by the Supreme Court of the United States. Prerequisite: 6 semester hours of Political Science. Credit may not be obtained in both POLS 4332 and CRIM 4332.
- 4333. The American Judicial Process.** 3(3-0)
The federal judicial system in terms of structure, function and process with stress on court interaction at both intracourt and intersystem levels. Prerequisite: 6 semester hours of Political Science. Credit may not be obtained in both POLS 4333 and CRIM 4333.
- 4341. International Relations.** 3(3-0)
The underlying principles governing political relations among sovereign states and the application of these principles to contemporary international problems. Prerequisite: 6 semester hours of Political Science.
- 4342. International Organization.** 3(3-0)
Basic features, functions and problems of international organizations through the League of Nations, the United Nations and its specialized agencies and other important regional organizations in the context of the world situation. Prerequisite: 6 semester hours of Political Science.
- 4343. International Law.** 3(3-0)
An introduction to the study of international law. This course examines the definition, object and sources of international law as well as its relationship to domestic law and to the study of international relations. Prerequisite: 6 semester hours of Political Science.
- 4351. Comparative Politics.** 3(3-0)
The structures, functions and processes of selected political systems. May be repeated once for credit. Prerequisite: 6 semester hours of Political Science.

- 4354. The Government and Politics of Latin America.** 3(3-0)
The structures, functions and processes of the political systems of the nations of Central America, the Caribbean and South America. Prerequisite: 6 semester hours of Political Science.
- 4355. The Government and Politics of Mexico.** 3(3-0)
The structures, functions and processes of the political system of Mexico. Prerequisite: 6 semester hours of Political Science.
- 4361. Public Administration.** 3(3-0)
The place of public administration in government; the relations of the bureaucracy to other government institutions and the public. Prerequisite: 6 semester hours of Political Science.
- 4363. Policy and Policy-Making in the United States.** 3(3-0)
Public policy and its formation through the interaction of political groups and governmental institutions in selected areas of public policy; relevant comparisons to other national systems. Prerequisite: 6 semester hours of Political Science.
- 4364. Women and Politics.** 3(3-0)
Description, analysis and assessment of women's place in a democracy through a focus on women's capacity to relate to and use political power. Prerequisite: 6 semester hours of Political Science. Credit may not be obtained in both POLS 4364 and WMST 4364.
- 4370. Special Studies in Political Science.** V:1-3
An intensive examination of special topics of study in political science. Course may be repeated for credit when the topic of study changes. Prerequisite: 6 semester hours of Political Science or consent of the instructor.

**Degree Requirements
Bachelor of Arts
Political Science**

| | | | | | | | |
|-------------------------------------|----------|---------------------------------|----------|-------------------------|----------|------------------------------|-----------|
| Freshman Year | | | | Junior Year | | | |
| ENGL 1301 | 3 | ENGL 1302 | 3 | ECON 2301 | 3 | ECON 2302 | 3 |
| HIST 1301 | 3 | HIST 1302 | 3 | #PHIL 3301 or | 3 | Minor | 3 |
| POLS 2304 | 3 | MATH 1314 or | 3 | Elective, adv. | | *Minor, adv. | 3 |
| SOCI 1201 | 2 | MATH 1334 | | POLS 3302 | 3 | POLS, adv. | 3 |
| [^] Visual/performing arts | 3 | POLS 2302 | 3 | SOCI 3381 or | 3 | POLS, adv. | 3 |
| Kinesiology | <u>1</u> | Kinesiology | 1 | BUAD 3355+ | | | <u>15</u> |
| | 15 | Foreign language | <u>3</u> | Foreign language | <u>3</u> | | |
| | | | 16 | | 15 | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 or ENGL | 3 | ENGL 2362 or ENGL | 3 | *Minor, adv. | 3 | Minor, adv. | 3 |
| 2314 | | 2314 | | *Minor, adv. | 3 | Minor, adv. | 3 |
| GEOG 1303 | 3 | POLS 2340 | 3 | POLS, adv. | 3 | POLS, adv. | 3 |
| POLS 2301 | 3 | [^] Oral communication | 3 | POLS, adv. | 3 | *POLS or Elective, adv. | <u>3</u> |
| Lab Science | 4 | Lab science | 4 | *POLS or Elective, adv. | <u>3</u> | | 12 |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | | 15 | | |
| | 16 | | 16 | | | | |
| | | | | | | Total Hours Reqd: 120 | |

Total hours may vary depending on the requirements of the minor chosen (see the list of Recognized Minors in the College of Arts and Sciences section of the current catalog), but must be at least 120, including 45 advanced hours.

Majors must complete the department's written communications skills requirement.

+All except business minors should take SOCI 3381; business minors will also need to elect MATH 1325, a prerequisite for BUAD 3355.

#Pre-law students should take PHIL 3301.

*These courses may be non-advanced if additional advanced courses are included elsewhere in the program.

[^]For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

PRE-HEALTH PROFESSIONS PROGRAMS

Amanda Muñiz, *Pre-Health Sciences Academic Adviser and JAMP Faculty Director; Lecturer*
Kleberg Hall 124. MSC 117. Extension 3797

The Texas A&M University-Kingsville Pre-Health Professions Advising Office provides information and assistance to prospective, current and former students of Texas A&M University-Kingsville interested in pursuing health-related careers. Services include one-on-one academic, career and admissions advising, information on professional school selection, seminars on various health professions, access to summer enrichment programs and much more. Interested students should contact the Pre-Health Professions Advising Office as early in their academic careers as possible to take full advantage of the myriad of opportunities available.

Programs and Majors

Although a student may major in any field and if qualified, be accepted into a health professional school, the Bachelor of Science degree in either Biomedical Science or Biology from Texas A&M University-Kingsville provides for the vast majority of prerequisite courses for the following graduate degree programs:

Medicine (M.D.), Doctor of Osteopathic Medicine (D.O.), Dentistry (D.D.S.), Doctor of Pharmacy (Pharm.D.), Physical Therapy (D.P.T.), Occupational Therapy (O.T.D.), Physician Assistant (P.A.), Doctor of Chiropractic (D.C.) and Doctor of Optometry (O.D.).

Texas A&M University-Kingsville also offers the prerequisite courses for several undergraduate, pre-health professions degrees available at other South Texas institutions such as:

Nursing (B.S.N.), Associate Degree in Nursing (A.D.N.), Clinical Laboratory Sciences, Physical Therapy Assistant (P.T.A.), Occupational Therapy Assistant (O.T.A.), Radiology Technician (C.R.T.), Dental Hygiene, Respiratory Care Therapist and many other allied health fields.

Early Admissions Programs

Dental School Early Admissions Programs

Texas A&M University-Kingsville offers 3+4 Early Admissions Programs in dentistry with University of Texas Health Science Center-San Antonio Dental School, Texas A&M University System Health Science Center-Baylor College of Dentistry and University of Texas Health Science Center at Houston Dental Branch. These programs provide early acceptance to dental school for qualified students during the spring semester of their freshman year and are called 3+4 because students typically spend three years at Texas A&M University-Kingsville meeting the basic degree requirements and then spend the required four years in dental training. Students who complete the program will receive a B.S. from Texas A&M-Kingsville and a D.D.S. from one of the Texas Dental Schools in seven rather than eight years. The requirements for each of these programs are unique to each institution. Interested students should contact the Pre-Health Professions Adviser for specific information.

Partnership for Primary Care (PPC)

<http://medicine.tamhsc.edu/admissions/ppc/index/html>

The Partnership for Primary Care Program is available for qualified students. Texas A&M University System Health Science Center-College of Medicine will award Texas A&M University-Kingsville students early acceptance into its medical school prior to the start of the undergraduate freshman year or at the end of the undergraduate freshman year provided:

- the student's legal residence is in a federally-recognized, medically underserved region in the State of Texas,
- the student graduates in the top 10% of his/her high school graduating class,
- the student earns a minimum high school grade point average of a 3.5 on a 4.0 scale,
- the student scores a 1200 SAT or 26 ACT,
- the student demonstrates commitment to the medical profession
- and the student maintains a 3.5 or better college grade point average each year of enrollment at Texas A&M University-Kingsville.

Joint Admission Medical Program (JAMP)

<http://www.utsystem.edu/jamp/>

The Joint Admission Medical Program (JAMP), provides services to support and encourage **highly qualified economically disadvantaged students** pursuing a medical education. Students selected from JAMP will receive undergraduate and graduate scholarships and summer stipends; JAMP also guarantees the admission of those students who are qualified to a participating Texas medical school provided they satisfactorily complete all program requirements (See Pre-Health Professions Adviser for specific regulations). Qualified students must meet the following criteria:

- be a Texas resident
- apply for admission to one of the participating universities and enter college as a first-time freshman immediately following graduation from high school,
- take the SAT or ACT and earn a score not less than the mean for the State of Texas and provide the scores to the participating university,
- complete and submit the FASFA and be eligible to receive a Pell Grant in the student's freshman year of college and
- complete 30 hours of undergraduate credit during the fall and spring semester of his/her freshman year with a 3.25 GPA or higher (no more than 3 hours of AP credit can be counted toward this requirement).

Summer Enrichment Programs

Various summer enrichment programs designed to facilitate and enhance the students' entry into professional school are available to Texas A&M University-Kingsville students. These programs provide stipends, academic enrichment, clinical experience, admissions counseling, rigorous standardized entrance exam preparation and the opportunity for the professional school faculty and staff to become familiar with their particular strengths well in advance of their application. A sample of the available programs typically attended by pre-health professions students include:

- The University of Texas Medical Branch/UT Pan American Academic Enrichment Program
- The University of Texas Medical Branch Medical School Familiarization Program
- Minority Medical Education Program
- Texas A&M University System Health Science Center-College of Medicine Bridge to Medicine MCAT Preparatory Program
- The University of Texas-Houston Health Science Center Medical School Summer Enrichment Program
- Baylor College of Medicine Honors Premedical Academy
- Johns Hopkins University School of Medicine Human Anatomy Course for Undergraduates
- The University of Texas Health Science Center-San Antonio Dental School Summer Dental Research Program
- Texas A&M University System Health Science Center-Baylor College of Dentistry Pre-Dental Summer Enrichment Program
- The University of Texas Dental Branch at Houston Summer Enrichment Program
- Texas Tech University Health Sciences Center Rural Pre-Health Professional Summer Academy

Required Course Prerequisites for Medical and Dental Schools in Texas:

In addition to the General Educational and Specific Degree Requirements as the vast majority of students accepted to medical and dental school earn a baccalaureate degree prior to acceptance, the following courses represent the minimum requirements for acceptance as declared by the medical and dental schools in Texas. However, numerous additional courses and nonacademic activities are just as critical to be a successful pre-medical or pre-dental student. Frequent consultation with the Pre-Health Professions Adviser is very important. The Medical College Admissions Test (MCAT) and Dental Admissions Test (DAT) are also required for medicine and dentistry, respectively.

| Academic Area | Course Numbers | Total Semester Hours |
|---|--|-----------------------------|
| Biology | required: BIOL 1306/1106, BIOL 1307/1107, BIOL 2421, BIOL 3402 strongly recommended: BIOL 2401, BIOL 2402, BIOL 3408, BIOL 4401, BIOL 4402, BIOL 4406, BIOL 4408, BIOL 4426 | 20 |
| Chemistry | required: CHEM 1311/1111, CHEM 1312/1112, CHEM 3323/3123, CHEM 3325/3125 strongly recommended: CHEM 4341* and CHEM 4342 *CHEM 4341 is required for Dental School | 16-19 |
| English | ENGL 1301, ENGL 1302 *courses in literature strongly recommended | 6 |
| Mathematics (not required for Dental School) | MATH 2413 (may require completion of MATH 1314, MATH 1316, MATH 1348 if student has not earned CLEP or AP credit) | 3 |
| Physics | PHYS 1301/1101 or PHYS 2325/2125, PHYS 1302/1102 or PHYS 2326/2126 | 8 |

Pre-Pharmacy Generic Curriculum

The Pre-Pharmacy Curriculum consists of at least two years of college credit; however, the number of students gaining acceptance to pharmacy school that complete at least three years of college or a baccalaureate degree prior to entry is growing rapidly as the general applicant pool becomes more competitive every year. The following courses represent the combined minimum requirements for acceptance as declared by pharmacy schools in Texas. Students are encouraged to complete the prerequisites to apply to all pharmacy schools in Texas in order to increase their overall chances of acceptance. However, students should consult with the Pre-Health Professions Adviser for requirements specific to each school. The applicant will be evaluated on the quality of overall academic performance, letters of recommendation and interviews. The Pharmacy College Admission Test (PCAT) is also required.

Note: Students attending institutions other than Texas A&M University-Kingsville for their undergraduate studies that wish to apply for admission to the Texas A&M Health Science Center Irma Lerma Rangel College of Pharmacy should consult with the School of Pharmacy staff and the Pre-Health Professions Adviser at their parent institution for the specific courses at that institution that meet the prerequisites specific to the Texas A&M Health Science Center Irma Lerma Rangel College of Pharmacy.

| Academic Area | Course Numbers | Total Semester Hours |
|----------------------------|---|----------------------|
| Biology* required: | BIOL 1306/1106 and BIOL 1307/1107, BIOL 2421, BIOL 3402 | 20 |
| recommended: | BIOL 2401, BIOL 2402, BIOL 3408, BIOL 4406, BIOL 4408, BIOL 4426 | |
| Chemistry required: | CHEM 1311/1111, CHEM 1312/1112, CHEM 3323/3123, CHEM 3325/3125 | 16 |
| recommended: | CHEM 4341, CHEM 4342 | |
| Physics* | PHYS 1301/1101 or PHYS 2325/2125 | 4 |
| Mathematics | MATH 2413 (may require completion of MATH 1314, MATH 1316, MATH 1348 if student has not earned CLEP or AP credit) | 3 |
| Statistics | STAT 1342 | 3 |
| English* | ENGL 1301, ENGL 1302, ENGL 2342 or ENGL 2362 | 9 |
| History | HIST 1301, HIST 1302 | 6 |
| Political Science | POLS 2301, POLS 2302 | 6 |
| Social/Behavioral Science* | PSYC 2301 or SOCI 1301 or ECON 2301 | 3 |
| Visual/Performing Arts* | (examples of; not inclusive) ARTS, MUSI or THEA 2301, ARTS 1303, ARTS 1304 or any 3 hour lab or studio course from ARTS, MUSI or THEA | 3 |
| Communications | COMS 1311 or COMS 1315 | 3 |

*Hours vary depending on the specific pharmacy college.

Pre-Optometry, Pre-Physical Therapy, Pre-Occupational Therapy, Pre-Physician Assistant, Pre-Clinical Lab Sciences Generic Curriculum:

Students interested in the careers listed above must complete the General Education Requirements in addition to the following courses. However, there are variations in those requirements for each institution offering the respective graduate degrees. The listing below itemizes only the common courses required of all four careers listed in this section. Additional courses and nonacademic activities are just as critical in order to be successful. Therefore, frequent consultation with the Pre-Health Professions Adviser is very important. The Optometry Admissions Test (OAT) is required for optometry school. The Graduate Record Examination (GRE) is required for physical therapy, occupational therapy and physician assistant schools.

| Academic Area | Course Numbers | Total Semester Hours |
|--|---|----------------------|
| Biology* | BIOL 1306/1106, BIOL 1307/1107, BIOL 2401, BIOL 2402, BIOL 2421 | 26 |
| | *BIOL 2421 is not required for Physical or Occupational Therapy | |
| Chemistry | CHEM 1311/1111, CHEM 1312/1112, CHEM 3323/3123 *CHEM 3325/3125 and CHEM 4341 are also required for Optometry | 12-19 |
| Physics (not required for Physician Assistants) | PHYS 1301/1101 or PHYS 2325/2125, PHYS 1302/1102 or PHYS 2326/2126 | 8 |
| Additional Mathematics (only required for Optometry) | MATH 2413 (may require completion of MATH 1314, MATH 1316, MATH 1348 if student has not earned CLEP or AP credit) | 3 |
| Statistics | STAT 1342 | 3 |
| Additional English** (only required for Physical Therapy) | ENGL 2314 | 3 |
| Psychology* | PSYC 2301, PSYC 4315 (TOPIC: Developmental Psychology), one additional advanced PSYC | 3-9 |
| Sociology* | SOCI 1301 | 3 |

*Hours and specific courses vary depending on the specific program

**A Medical Terminology course may also be required for some graduate schools (usually available as an Internet course from various institutions).

Pre-Nursing Generic Curriculum

The curriculum for a nursing degree depends on whether a student is interested in applying to a two-year nursing program (Associate Degree in Nursing) or a four-year nursing program (Bachelor of Science in Nursing). Students interested in pursuing a two-year degree in nursing are not required to complete the general education courses, though it is recommended. Schools of nursing differ greatly in their entrance requirements. After deciding on a school or schools, the student should write to the Director of Admissions for the latest catalog and follow the program outlined as nearly as possible. Students should consult the Pre-Health Professions Adviser for specific course programs.

DEPARTMENT OF PSYCHOLOGY AND SOCIOLOGY

Jieming Chen, *Chair*

Manning Hall 120. MSC 177. Extension 2701.

Professors

Chen, Dempster, Domino, Green, Juarez, Tallant

Associate Professors

Daughtry, Guerrero

Assistant Professors

Casa de Calvo, Frederick, Garza, Hodges, Lopez, Louis, Wark

Lecturers

Hill, Walker-Ewert

Faculty Emeritus

Bittinger

The Department of Psychology and Sociology is committed to the goals of a liberal education emphasizing human growth and intellectual development through an understanding of individual behavior, social interaction and cultural awareness at the undergraduate and graduate levels. The various programs in the department are geared specifically toward the professional preparation of social scientists and practitioners in the areas of human development, gender and minority relations, families and children, Mexican American culture and folklore, U.S.-Mexico borderlands studies, abnormal and deviant behavior, counseling, social work, and criminology.

The department promotes critical analyses and creative approaches surrounding the well-being of South Texas. It provides a comprehensive level of quality instruction, research and community involvement. By doing so it supports the academic, research and service goals of the College of Arts and Sciences and the mission of the University.

The department offers majors and minors in Criminology, Psychology, Sociology; a major in Social Work and minors in Anthropology, Mexican American Studies and Southwest Borderlands Studies.

ANTHROPOLOGY (ANTH)

2301. Introduction to Archeology. (ANTH 2302) 3(3-0)

General introduction to the field of archeology. Emphasis on methods of data collection, analysis and a world review of major events in the development of past human civilizations.

2302. Introduction to Anthropology. (ANTH 2346) 3(3-0)

Major aspects of culture (social organization, economics, religion, etc.); cultural patterns and sociocultural change; prehistory of humans and the development of their culture.

2303. Introduction to Physical Anthropology. (ANTH 2301) 3(3-0)

An introduction to the origins and evolution of humans as reconstructed from the fossil record and from patterns of anatomical, behavioral and genetic similarity among living primates.

3301. American Cultures Before 1492. 3(3-0)

Development of Native American cultures (Maya, Inca, Aztec and related cultural traditions) of U.S., Mexico, Central and South America before Spanish, English and French conquest. Optional field trip when possible. Prerequisite: 3 semester hours of Anthropology/Southwest Borderlands Studies or 6 semester hours of social science.

3302. Principles of Cultural Anthropology. 3(3-0)

Major approaches in the field of cultural anthropology and the major influences on the discipline; introduction to research methodology used in both primitive and modern societies. Prerequisite: 3 semester hours of Anthropology or 6 semester hours of social science.

4301. Social Theory. 3(3-0)

Development of social theory as represented by Comte, Spencer, Durkheim and Weber, to contemporary schools of thought, including functionalism, conflict, symbolic interactionism, structuralism and world systems theory. Prerequisite: ANTH

2302 or SOCI 1301 and 6 semester hours of advanced Anthropology or Sociology. Credit may not be obtained in both ANTH 4301 and SOCI 4383.

4303. Folk Medicine. 3(3-0)
An examination of the folk medical system of Mexican Americans from an anthropological perspective. Includes an exploration of household remedies (including herbal remedies), folk illness syndromes, various folk healers (including *parteras*, or midwives, and *sobadores*, or massagers), *curanderismo* (folk healing) and *brujeria* (witchcraft) in present-day Mexican American culture in South Texas and the Southwest. Prerequisite: 3 semester hours of Anthropology/Southwest Borderlands Studies or 6 semester hours of social science.

4305. Language and Culture. 3(3-0)
Introduction to the social and cultural aspects of language and provides framework and methodology for studying and analyzing the many elements which make up verbal and nonverbal communication in various speech communities in the United States. Prerequisite: 3 semester hours of Anthropology/Southwest Borderlands Studies or 6 semester hours of social science.

4308. Latin American Culture. 3(3-0)
Origin and development of contemporary cultural forms in Latin America. Industrialization, socioeconomic and demographic change are examined from several theoretical perspectives. Prerequisite: 3 semester hours of Anthropology/Southwest Borderlands Studies or 6 semester hours of social science.

4309. Mexican Border Subcultures. 3(3-0)
Analysis of social processes such as competition, accommodation and cooperation occurring in the American Southwest and in Northern Mexico, with attention to such variables as ethnicity and stratification. Prerequisite: 3 semester hours of Anthropology/Southwest Borderlands Studies or 6 semester hours of social science.

4350. Selected Topics in Anthropology. 3(3-0)
Literature and research in anthropological areas not otherwise treated in depth in available courses. May be repeated once for credit when topics differ. Prerequisite: ANTH 2302 or SOCI 1301 and 6 semester hours of social science.

4382. Methods of Social Research. 3(3-0)
Introduction to the study of the scientific method as applied to social research, including the logic of science, covering the nature of data, hypotheses, concepts and objectivity. Prerequisites: ANTH 2302 or SOCI 1301 and 3 semester hours of advanced Anthropology or Sociology. Credit may be obtained in only one of ANTH 4382, CRIM 4382 or SOCI 4382.

4604. South Texas Field Archaeology. 6(3-V)
Data collection, analysis and theory in anthropological archaeology with direct field experience examining selected South Texas ancient and historic societies. Students required to camp on-site during the field school. Prerequisite: 6 semester hours of social science or consent of the instructor. Special field course fee required: \$300, subject to change.

CRIMINOLOGY (CRIM)

3302. Social Deviance. 3(3-0)
Survey of the sociological and psychological aspects of deviant behavior. Nature of deviance, types of deviant behavior, causal theories and social policy implications. Prerequisites: SOCI 1301 and 3 semester hours of Criminology or Sociology. Credit may not be obtained in both CRIM 3302 and SOCI 3302.

3320. Psychology of Criminal Behavior. 3(3-0)
Psychological processes related to behaviorism, social learning theory, aggression theory, bio-psychological factors, criminal homicide, sexual offenses, drugs and crime, correctional psychology, the criminal offender and the mentally disordered offender. Prerequisites: PSYC 2301 and SOCI 1301. Credit may not be obtained in both CRIM 3320 and PSYC 3320.

3321. Introduction to Criminology. 3(3-0)
Extent, types, causation, patterns and organization, apprehension, punishment treatment, agents and agencies related to crime and criminals, including experiences such as field trips and visits to jail may be included. Prerequisite: SOCI 1301. Credit may not be obtained in both CRIM 3321 and SOCI 3321.

3322. Juvenile Delinquency. 3(3-0)
Incidences, types, causation, patterns, processes, treatment agencies and research as related to juvenile delinquency. Selected practical experiences such as field trips to juvenile institutions. Prerequisite: SOCI 1301. Credit may not be obtained in both CRIM 3322 and SOCI 3322.

4320. Law and Society. 3(3-0)
An in-depth examination of law and society through the philosophy and evolution of legal systems and legal institutions. The major functions of law as agents of social control, dispute resolution and societal engineering are addressed. Prerequisites: SOCI 1301 and 3 semester hours of Criminology or Sociology. Credit may not be obtained in both CRIM 4320 and SOCI 4320.

4321. Criminological Theory. 3(3-0)
An overview of the principle theories of criminality and the application of these theories to contemporary crime issues. Prerequisite: CRIM 3321 or SOCI 3321.

4325. Sociology of Corrections. 3(3-0)
Overview of social psychological, cultural, sociological and political factors related to the correctional enterprise. Includes treatment of the context of corrections, correctional practices, correctional issues, correctional institutions and correctional perspectives. May include field trips to correctional institutions. Prerequisite: CRIM 3321 or SOCI 3321. Credit may not be obtained in both CRIM 4325 and SOCI 4325.

4326. Community Resources in Corrections. 3(3-0)
An analysis of correctional processes and facilities available at the community level. Topics include: probation, parole, diversion, halfway houses, community reintegration procedures, community treatment centers and volunteer programs. Emphasis is placed on social structure, functions and problems of community-based programs. May include practical experiences such as field trips. Prerequisites: CRIM 3321 and SOCI 1301.

4331. Constitutional Law. 3(3-0)
A survey of American constitutional law, using leading cases, both historic and contemporary, of the Supreme Court of the United States. Establishment of the federal political system for which the Constitution provided and the judicial allocations of political and economic power within that system. Prerequisite: 6 semester hours of Political Science. Credit may not be obtained in both CRIM 4331 and POLS 4331.

4332. Constitutional Law. 3(3-0)
A survey of American constitutional law, using leading cases, both historic and contemporary, of the Supreme Court of the United States. Matters of rights and liberties, their recognition and definition, policies of rights developed by the Supreme Court of the United States. Prerequisite: 6 semester hours of Political Science. Credit may not be obtained in both CRIM 4332 and POLS 4332.

4333. The American Judicial Process. 3(3-0)
The federal Judicial System in terms of structure, function and process with stress on court interaction at both intracourt and intersystem levels. Prerequisite: 6 semester hours of Political Science. Credit may not be obtained in both CRIM 4333 and POLS 4333.

4340. Topics in Criminology. 3(3-0)
Literature and research in the area of criminology not otherwise treated in depth in available courses. Topics will vary according to needs, interests and capability of the instructor. May be repeated once for credit when topic differs. Prerequisite: 6 semester hours of Criminology.

4341. Organized and White-Collar Crime. 3(3-0)
An in-depth view of the social structural and organization factors leading to the development of organized and white collar criminal activity from a sociological perspective. The nature, extent, types, costs, structure and control of these crimes will be treated. Prerequisite: 6 semester hours of Criminology.

4342. Substance Abuse. 3(3-0)
A general survey of current research on psychological, social, legal and situational factors involved in substance usage and its effect on human behavior and criminal activity. Includes a treatment of therapeutic procedures and facilities. Prerequisite: 6 semester hours of Criminology or Psychology. Credit may not be obtained in both CRIM 4342 and PSYC 4342.

4345. Victimology. 3(3-0)
An examination of the historical role of crime victims, nature of victimization in modern society, the victimization process, solutions to victimization and victim's rights. Emphasis given to the social, legal, psychological and societal aspects of victimization. Victim-offender interaction and societal response to victimization will also be treated. Prerequisite: 6 semester hours of social science.

4346. Gangs and Gang Behavior. 3(3-0)
Gangs and gang behavior from a cross-cultural perspective. The historical evolution of gangs in America and Europe. Emphasis on the causes, consequences and social control of gangs in relation to society. Prerequisite: 6 semester hours of Criminology.

4348. Violence. 3(3-0)
Types of violence from a historical and cross-cultural perspective, identifying and delineating patterns of violent behavior. Social structure and culture are linked to violence and examined in the context of individuals, groups and societies. Emphasis is placed on the social control of violence. Prerequisite: 6 semester hours of Criminology.

4382. Methods of Social Research. 3(3-0)
Introduction to the study of the scientific method as applied to social research including the logic of science, covering the nature of data, hypotheses, concepts and objectivity. Prerequisites: SOCI 1301 and 3 semester hours of Sociology. Credit may be obtained in only one of CRIM 4382, ANTH 4382 or SOCI 4382.

4384. Directed Research in Criminology. V:1-3
Supervised research experience in criminology. Student will assist with a research project by working under the individual guidance of a faculty member. Requirements may include library research, data collection, data entry, statistical analysis and/or assistance in planning and conducting parts of a research project. A paper on the research experience is required. May be repeated for a maximum of 3 semester hours of credit. Prerequisites: SOCI 3381 or PSYC 3381, CRIM 4382 and 6 other semester hours of Criminology. (Consent of instructor required.) Credit/Non-credit.

MEXICAN AMERICAN STUDIES

A minor in Mexican American Studies requires eighteen (18) hours. This minor includes courses that focus on ancient and historic cultures, modern cultural studies, geography, history, music, political science, sociology, the Spanish language and Spanish literature, and regional studies of the Southwest Borderlands, which examine both sides of the U.S.-Mexico border.

SWBS 2301 is required of all persons taking this minor. Students may select from a list of additional courses to complete this minor. The list of applicable courses may be obtained from the program coordinator or department chair. No more than 9 semester hours in any discipline may apply toward the minor. Students may not count the same course toward both a major and a minor. Students should have all of the prerequisites or permission from the instructor. Course descriptions are available under each discipline prefix.

PSYCHOLOGY (PSYC)

2301. Introduction to Psychology. (PSYC 2301) 3(3-0)
Scientific method of psychology; psychological phenomena and basic processes necessary to understanding human behavior. Emphasis on heredity-environment; personality development, motivation, emotion, attitudes and intelligence. Prerequisite to all other courses in Psychology.

2302. Survey of General Psychology. (PSYC 2302) 3(3-0)
A continuation of PSYC 2301 with emphasis on learning, perception, physiological factors, the senses, experimental design and method. Prerequisite: PSYC 2301.

- 2305. Women's Issues in Health and Sexuality.** 3(3-0)
Examines health and medical issues for women, legal and political realities that influence women's lives and important aspects of intimacy and sexuality with a focus on both physiological and psychological development. Credit can be received in only one of PSYC 2305, EDHL 2305 or WMST 2305.
- 2306. Human Sexuality.** (PSYC 2306) 3(3-0)
Biophysical and psychological aspects of human sexuality. Credit may not be obtained in both PSYC 2306 and SOCI 2306.
- 2308. Child Psychology.** (PSYC 2308) 3(3-0)
A scientific study of the child as a sentient organism. The best methods of child study; native and learned behavior patterns and their development; the nature, amount and significance of individual differences; typical and atypical child behavior; emotions; play; language; work in specific capacity and interest; growing personality. Prerequisite: PSYC 2301 and sophomore standing.
- 3301. Social Psychology.** 3(3-0)
Theory and phenomena of social psychology. The nature and type of social variables and the methods used to study them. The effect of social variables upon the behavior of individuals. Prerequisite: 6 semester hours of Psychology or 12 hours of social science. Credit may not be obtained in both PSYC 3301 and SOCI 3301.
- 3303. Psychology of Personal Adjustment.** 3(3-0)
Adjustment problems of normal people. Principles of healthy psychological functioning in relation to family, peers, career, community and culture. Prerequisite: 6 semester hours of Psychology.
- 3304. Introduction to Learning Psychology.** 3(3-0)
General principles of learning and memory and an introduction to learning theory. Emphasis on motivation, conditioning and problem-solving. Prerequisite: 6 semester hours of Psychology.
- 3313. Psychology of Women.** 3(3-0)
An overview of the broad range of psychological issues and biological events which are of significant relevance to women. Explores the richness of the female experience in terms of changing values, attitudes and expectations. Prerequisite: 6 hours of Psychology. Credit may not be obtained in both PSYC 3313 and WMST 3313.
- 3314. Psychology of Adolescence.** 3(3-0)
Treats the definition of adolescence, research and theory concerning the biological, moral, sex-role, personality and emotional development. Prerequisite: 6 semester hours of social science approved by the instructor.
- 3315. Health Psychology.** 3(3-0)
Examines and defines the nature of illness and healing through the integration of biophysiological, psychoneuroimmunological, psychological and environmental factors. Examines stress and stress management techniques. Prerequisites: 9 hours of social science and PSYC 2301.
- 3320. Psychology of Criminal Behavior.** 3(3-0)
Psychological processes related to behaviorism, social learning theory, aggression theory, bio-psychological factors, criminal homicide, sexual offenses, drugs and crime, correctional psychology, the criminal offender and the mentally disordered offender. Prerequisites: PSYC 2301 and SOCI 1301. Credit may not be obtained in both PSYC 3320 and CRIM 3320.
- 3381. Statistics for the Behavioral Sciences.** 3(3-0)
Statistics for students in psychology, sociology and education. Emphasis upon descriptive and inferential techniques. Basic concepts in sampling data organization and statistic selection. Prerequisite: 6 semester hours of social science. Credit may not be obtained in both PSYC 3381 and SOCI 3381.
- 3387. Experimental Psychology.** 3(2-2)
Introduction to experimentation in psychology. Basic experiments will be performed on the discriminial process, motivation and learning. Prerequisites: 6 semester hours of Psychology and PSYC 3381 or equivalent.

- 4302. Industrial Organizational Psychology.** 3(3-0)
Application of psychological principles to the world of work and to organizations. Topics include recruitment and selection of employees, evaluation of job performance, motivation, training, leadership, job satisfaction and work teams. Prerequisite: 12 semester hours of social science and senior standing.
- 4304. Family Therapy.** 3(3-0)
An overview of family systems approaches to etiology and treatment. Family dysfunctions that result from drug and alcohol usage and other causes are emphasized. Prerequisite: 12 semester hours of psychology.
- 4305. Advanced Human Sexuality.** 3(3-0)
Psychosocial factors in human sexuality with emphasis on sexual adjustment, sexual dysfunctions, sexual variations and new approaches in sex therapy. Appropriate field trips may be included. Prerequisite: PSYC 2306 or SOCI 2306. Credit may not be obtained in both PSYC 4305 and SOCI 4305.
- 4308. Theory and Principles of Psychological Testing.** 3(3-0)
An introduction into the rationale of psychological measurement. Test construction, validity, reliability, standardization and statistical treatment of test results. Various accepted tests will be examined as they present measurement of significant individual characteristics. Prerequisite: 9 semester hours of Psychology, including PSYC 3381 or its equivalent.
- 4312. Physiological Psychology.** 3(3-0)
Introduction to the physiological substrata of behavior; including basic neuroanatomy, research techniques, basic physiology, sensory processes and central nervous system functions. Prerequisite: PSYC 2301 and PSYC 2302.
- 4315. Selected Topics in Psychology.** 3(3-0)
Literature and research in areas of psychology not otherwise treated in depth in available courses. May be repeated once as topics change. Prerequisite: 12 semester hours of Psychology.
- 4322. Psychology of Personality.** 3(3-0)
A comparison of personality theories and the implications for personality development and change. Prerequisite: 6 semester hours of Psychology.
- 4323. History and Systems of Psychology.** 3(3-0)
Important historical antecedents and contemporary psychological systems. An exit course that integrates diverse material encountered in the discipline. Prerequisite: 6 semester hours of advanced Psychology; senior standing.
- 4325. Abnormal Psychology.** 3(3-0)
Personality development and adjustment, causes of abnormal behavior, neuroses, psychoses, suicide, personality disorders and crime. Prerequisite: 6 semester hours of Psychology.
- 4328. Psychology of Perception.** 3(3-0)
Analysis of basic perceptual phenomena and theories of perception. Emphasis on sensation, attention, meaning and structural concepts. Prerequisite: 6 semester hours of Psychology.
- 4342. Substance Abuse.** 3(3-0)
A general survey of current research on psychological, social, legal and situational factors involved in substance usage and its effect on human behavior and criminal activity. Includes a treatment of therapeutic procedures and facilities. Prerequisite: 6 semester hours of Criminology or Psychology. Credit may not be obtained in both PSYC 4342 and CRIM 4342.
- 4351. Directed Research in Psychology.** V:1-3
Individual instruction course for advanced and qualified undergraduates to obtain supervised research experience in psychology. Student will assist with a research project by working under the individual guidance of a psychology faculty member. Requirements may entail library research, data collection, data entry, statistical analysis and or assistance in

planning and conducting parts of a research project. A paper on the research experience is required. Consent of instructor required. May be repeated for a maximum of 3 semester credit hours. Prerequisites: PSYC 3381, PSYC 3387 or SOCI 4382 and 6 other semester hours of psychology. Credit/Non-credit.

SOCIAL WORK (SCWK)

The profession of social work is based on the values of service, social and economic justice, dignity and worth of the person, importance of human relationships and integrity and competence in practice. With these values as defining principles, the primary mission of the social work program is to offer an educational program that will prepare graduates to provide competent, entry-level, generalist social work to an ethnically and culturally diverse population with an educational emphasis on social justice and empowerment for people who are vulnerable, oppressed and living in poverty. The social work program is committed to promoting professional social work practice and values in the development of social work knowledge and responsive social service delivery systems.

Accreditation

The social work program is accredited by the Council on Social Work Education.

Degree Requirements

The bachelor's degree in social work requires the completion of 120 semester credit hours including 39 hours in social work and 81 semester credit hours in liberal arts and related courses with 45 advanced hours. The major in social work does not require the student to have a minor.

Admission to the Program

Students admitted to the university may declare their interest in becoming social workers and initiate a general academic program preparatory to this objective. Formal admission into the program is required to register for professional social work (3000 or 4000 level) courses. The qualifications for admission to the program are as follows:

1. Completion of 45 semester hours of course work including at least 30 hours of the following courses or their equivalent.
 - ENGL 1301, ENGL 1302, ENGL 2342 and ENGL 2362
 - HIST 1301, HIST 2302
 - MATH 1314 or MATH 1334
 - POLS 2301, POLS 2302
 - PSYC 2301*
 - SCWK 2331*, SCWK 2333*
 - SOCI 1301*

*Applicants must complete these courses with a C or better and an overall 2.25 grade point average in all courses.

2. Completion of 35 hours of community service work approved by the program.
3. Application for admission must be submitted on forms provided by the program and in accordance with the policies and procedures set out in the Bachelor of Social Work Student Handbook which is available in the program office.

Admission to the Field Sequence

The field sequence consists of the two practicum courses (SCWK 4641 and SCWK 4643) which are taken in consecutive semesters. Social work majors must meet the following qualifications for admission to the field sequence:

1. Students must be fully admitted to the social work program and have completed required prerequisites with a grade of "C" or higher in all social work courses.
2. They must have a GPA of 2.25 in the major and at least a 2.0 overall GPA.

Retention to the Program

Students may be advised to consider another major at any point after admission based on social work faculty's assessment of student's performance. The social work faculty continually assess majors' progress, and majors must maintain at least a 2.25 GPA in their major and earn at least a "C" in each social work course. Faculty also expect students to adhere to the profession's Code of Ethics, show emotional and mental stability, demonstrate strong communication skills, show working interpersonal relationships and be self-aware.

- 2331. Introduction to Social Work.** 3(3-0)
Survey of the social work profession, including history, philosophy, ethics and relevance to current social issues. Participation with service agencies to assess interest in pursuing social work as a career. Prerequisite: SOCI 1301.
- 2333. Human Behavior in the Social Environment 1.** 3(3-0)
Study of individuals as they develop physically, cognitively, socially, emotionally and spiritually over the life cycle with emphasis on benchmarks for growth. Utilizing the person-in-the-environment perspective, attention is given to social forces that inhabit growth and social functioning. Prerequisite: SCWK 2331 and PSYC 2301.
- 3335. Human Behavior in the Social Environment 2.** 3(3-0)
A systems approach to examining behaviors of individuals, families, groups, organizations and communities. Critical analysis of the systems of inequality associated with class, race and ethnicity, gender, sexual orientation, physical ability and age. Prerequisite: SCWK 2333 and admission to the social work program. Corequisite: SCWK 3337.
- 3337. Theories and Models of Social Work Practice.** 3(3-0)
Overview of social work practice utilizing generalist models. Emphasis on client strengths and empowerment, the change process and issues of human diversity. Prerequisite: SCWK 2333 and admission to the program. Corequisite: SCWK 3335.
- 4306. Selected Topics in Social Work.** 3(3-0)
Literature and research in areas of social work not otherwise treated in depth in available courses. May be repeated once as topics change. Prerequisites: SCWK 2331, SCWK 2333 and admission to the social work program.
- 4324. Social Work Methods I.** 3(3-0)
Social work practice from a generalist perspective with emphasis on the acquisition of knowledge, skills and values necessary for working at the micro practice level. Students will acquire relationship building, interviewing and problem solving skills necessary for affecting change and enhancing the functioning of individuals, families, groups, organizations and communities. Prerequisites: SCWK 2331, SCWK 2333 and admission to the social work program.
- 4325. Social Work Methods II.** 3(3-0)
Social work practice from a generalist perspective with emphasis on practice at the mezzo level. Students will acquire the knowledge and skills for working with individuals in small groups within the planned change process. Emphasis on values, ethics, human diversity and social justice. Concurrent enrollment in SCWK 4641 recommended. Prerequisite: SCWK 4324 admission to social work program.
- 4326. Social Work Methods III.** 3(3-0)
Social work practice from a generalist perspective with emphasis on practice at the macro practice level. Students will acquire the knowledge and skills necessary in the problem solving process with large groups, communities and organizations and their individual members. Emphasis on values, ethics, human diversity and social justice. Concurrent enrollment in SCWK 4643 recommended. Prerequisites: SCWK 4324 and admission to social work program.
- 4345. Social Welfare: Policy and Advocacy.** 3(3-0)
Historical and current survey of the social service delivery system as a response to human need. History, mission and philosophy of the social work profession. Conceptual and practical application in policy analysis, advocacy and practice with disempowered groups. Prerequisite: admission to the social work program.
- 4347. Methods of Social Work Research and Evaluation.** 3(3-0)
Principles of social research. Quantitative and qualitative research methodologies, analysis of data including statistical procedures, conclusions of research reports, analysis and evaluation of theoretical bases and systematic evaluation of practice. Prerequisite: admission to the social work program.
- 4641. Social Work Practicum 1.** 6(2-16)
First in a sequence of two field practicums. Educationally directed and professionally supervised direct service activities providing practical experience in the application of theory and skills acquired in the foundation courses. Two hundred (200) clock hours of field placement and a weekly seminar of two hours. Prerequisites: permission of field coordinator and credit or registration in SCWK 4325.

4643. Social Work Practicum 2. 6(2-16)
The second in a sequence of two field practicums. Educationally directed and professionally supervised direct service activities providing practical experience in the application of the theory and skills acquired in foundation courses. The application of research and evaluative techniques to the practice experience. Two hundred (200) clock hours of field placement; weekly seminar of two hours. Prerequisites: permission of field coordinator and credit or registration in SCWK 4326.

SOCIOLOGY (SOCI)

1201. Introduction to the Arts and the Sciences. 2(2-0)
Designed to serve a dual function: primarily as an introduction to a specific disciplinary area (i.e., arts and humanities: art, history, communications/theatre arts, language and literature, music) and secondarily as general university-level instruction in the methods and practice of critical thinking, analysis and communication. The 30 clock hour course assigns 20 hours to an academic core that is discipline-specific and 10 hours to instruction in and application of academic habits and skills. The course is required of all entering freshmen and transfer students with fewer than 20 hours.

1301. Principles of Sociology. (SOCI 1301) 3(3-0)
Study of the nature of human societies, social processes, social interaction, groups, culture, institutions and social change.

1306. Social Problems. (SOCI 1306) 3(3-0)
Survey of contemporary social problems and current trends in the direction of their solution. Prerequisite: SOCI 1301.

2306. Human Sexuality. (SOCI 2306) 3(3-0)
Biophysical and psychological aspects of human sexuality. Credit may not be obtained in both SOCI 2306 and PSYC 2306.

2361. Pluralistic Societies. 3(3-0)
Macrocultural and microcultural variables such as ethnicity, religion, age, socioeconomic status, language, gender and exceptionality and their impact upon major institutions such as education, labor markets and government.

2363. Women, Change and Society. 3(3-0)
Interdisciplinary approach utilizing political, historical and sociological factors to analyze the status of American women. Aspects of sex role socialization, institutional interaction, social problems and social movements are analyzed. Prerequisite: SOCI 1301 or 6 hours of social science. Credit may not be obtained in both SOCI 2363 and WMST 2363.

3301. Social Psychology. 3(3-0)
Theory and phenomena of social psychology. The nature and type of social variables and the methods used to study them. The effect of social variables upon the behavior of individuals. Prerequisite: 6 semester hours of Psychology or 12 hours of social science. Credit may not be obtained in both SOCI 3301 and PSYC 3301.

3302. Social Deviance. 3(3-0)
Survey of the sociological and psychological aspects of deviant behavior. Nature of deviance, types of deviant behavior, causal theories and social policy implications. Prerequisites: SOCI 1301 and 3 semester hours of Sociology or Criminology. Credit may not be obtained in both SOCI 3302 and CRIM 3302.

3321. Introduction to Criminology. 3(3-0)
Extent, types, causation, patterns and organization, apprehension, punishment treatment, agents and agencies related to crime and criminals, including experiences such as field trips and visits to jail may be included. Prerequisite: SOCI 1301. Credit may not be obtained in both SOCI 3321 and CRIM 3321.

3322. Juvenile Delinquency. 3(3-0)
Incidence, types, causation, patterns, processes, treatment agencies and research as related to juvenile delinquency. Selected practical experiences such as trips to juvenile institutions. Prerequisite: SOCI 1301. Credit may not be obtained in both SOCI 3322 and CRIM 3322.

3332. An Introduction to Group Work. 3(3-0)
A study of the dynamics of groups with emphasis on theories and findings concerning groups. Prerequisite: SOCI 1301 or 6 hours of social science.

- 3351. Urban Sociology.** 3(3-0)
The culture, history and growth patterns of cities; demographic, ecological patterns and trends. Problems of housing and community organization. Prerequisite: SOCI 1301.
- 3381. Statistics for the Behavioral Sciences.** 3(3-0)
Statistics for students in psychology, sociology and education. Emphasis upon descriptive and inferential techniques. Basic concepts in sampling data organization and statistic selection. Prerequisite: 6 semester hours of social science. Credit may not be obtained in both SOCI 3381 and PSYC 3381.
- 4305. Advanced Human Sexuality.** 3(3-0)
Psychosocial factors in human sexuality with emphasis on sexual adjustment, sexual dysfunctions, sexual variations and new approaches in sex therapy. Appropriate field trips may be included. Prerequisite: SOCI 2306 or PSYC 2306. Credit may not be obtained in both SOCI 4305 and PSYC 4305.
- 4307. The Family and Marriage.** 3(3-0)
History and development of the family as an educational and social institution, factors involved in family integrity, role of the individual in family relations, marital adjustments and family conservation in light of the present-day social and economic conditions. Prerequisite: SOCI 1301 or 6 semester hours of social science.
- 4308. Selected Topics in Sociology.** 3(3-0)
Literature and research in areas of sociology not otherwise treated in depth in available courses. May be repeated once for credit when topics differ. Prerequisite: 12 semester hours of Sociology.
- 4310. Population Problems.** 3(3-0)
Introduction to demographic concepts, such as fertility, mortality and migration of human populations in a larger social and cultural context, and to population problems in modern society. Prerequisites: SOCI 1301 or 6 semester hours of social science.
- 4312. Social Stratification.** 3(3-0)
Examination of patterns and distribution of stratification and social inequalities in modern society. Prerequisites: SOCI 1301 or 6 semester hours of social science.
- 4320. Law and Society.** 3(3-0)
An in-depth examination of law and society through the philosophy and evolution of legal systems and legal institutions. The major functions of law as agents of social control, dispute resolution and societal engineering are addressed. Prerequisites: SOCI 1301 and 3 semester hours of Sociology or Criminology. Credit may not be obtained in both SOCI 4320 and CRIM 4320.
- 4324. Technology and Society.** 3(3-0)
A study of technology and society from the perspective of social values, ethics, sociology, social environment, politics and economics. Prerequisite: 12 semester hours of social science.
- 4325. Sociology of Corrections.** 3(3-0)
Overview of social, psychological, cultural, sociological and political factors related to the correctional enterprise. Includes treatment of the context of corrections, correctional practices, correctional issues, correctional institutions and correctional perspectives. May include field trips to correctional institutions. Prerequisite: SOCI 3321 or CRIM 3321. Credit may not be obtained in both SOCI 4325 and CRIM 4325.
- 4341. Sociology of Aging.** 3(3-0)
Study of the last stage in the life-cycle of man. The course emphasizes the interdisciplinary approach necessary in the field of gerontology, the biological, psychological and social aspects of the aging process, along with the social impact of growing proportions of aged persons within the social structure of society. Prerequisite: SOCI 1301.
- 4342. Sociology of Death.** 3(3-0)
Sociological perspectives of the dying process and death itself, including the cultural and institutional means of aiding survivors through the grief, mourning and bereavement process. Prerequisite: 12 semester hours of Sociology.

4362. Race Relations. 3(3-0)
Critical analysis of the concept of race, analysis of subordinate peoples in various world societies and in the United States, emphasis on dynamics of problems of subordinate groups. Prerequisite: 6 semester hours of Sociology.

4364. Minority Women in U.S. Society. 3(3-0)
An integrated study of the impact that socioeconomic and ethnic/racial factors have on minority women within the United States. Prerequisite: SOCI 1301 or 6 semester hours of social science. Credit may not be obtained in both SOCI 4364 and WMST 4300.

4382. Methods of Social Research. 3(3-0)
Introduction to the study of the scientific method as applied to social research including the logic of science, covering the nature of data, hypotheses, concepts and objectivity. Prerequisites: ANTH 2302 or SOCI 1301 and 3 semester hours of advanced Anthropology or Sociology. Credit may be obtained in only one of SOCI 4382, ANTH 4382 or CRIM 4382.

4383. Social Theory. 3(3-0)
Development of social theory as represented by Comte, Spencer, Durkheim and Weber, to contemporary schools of thought, including functionalism, conflict, symbolic interactionism, structuralism and world systems theory. Prerequisite: ANTH 2302 or SOCI 1301 and 6 semester hours of advanced Anthropology or Sociology. Credit may not be obtained in both SOCI 4383 and ANTH 4301.

4386. Directed Research in Sociology. V:1-3
Individual instruction course for advanced and qualified undergraduates to obtain supervised research experience in sociology. Student will assist with a research project by working under the individual guidance of a sociology faculty member. Requirements may entail library research, data collection, data entry, statistical analysis and/or assistance in planning and conducting parts of a research project. A paper on the research experience is required. Consent of instructor required. May be repeated for a maximum of 3 semester credit hours. Prerequisites: SOCI 3381, SOCI 4382 or PSYC 3387 and 6 other semester hours of Sociology. Credit/Non-credit.

SOUTHWEST BORDERLANDS STUDIES (SWBS)

A minor in Southwest Borderlands Studies requires eighteen (18) hours. This interdisciplinary minor focuses on sociocultural, economic, demographic and environmental aspects of the U.S.-Mexico borderlands.

SWBS 2302 is required. Students may select from a list of additional courses to complete this minor. The list of applicable courses may be obtained from the program coordinator or department chair. No more than 9 semester hours in any discipline may apply toward the minor. Students may not count the same course toward both a major and a minor.

2301. Foundations of Mexican American Studies. 3(3-0)
History, economics, sociology, demography, folklore, education, art and literature of Mexican Americans.

2302. Introduction to Southwest Borderlands Studies. 3(3-0)
A survey of the multidimensional and interdependent nature of United States-Mexico regional interaction and development. A focus on southwest borderlands dynamics which impact upon culture, social institutions, ecological and demographic characteristics.

4301. Bicultural Groups in U.S. Society. 3(3-0)
A study of bicultural groups with salient ethnic characteristics, i.e., Blacks, Mexican Americans, Puerto Ricans, Japanese, Italians and Native Americans. Prerequisite: 3 semester hours of Southwest Borderlands Studies or 6 semester hours of social science.

**Degree Requirements
Bachelor of Science
Criminology**

| | | | | | | | |
|-------------------------------|----------|-------------------------------------|----------|----------------------|----------|----------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ENGL 1301 | 3 | COMS 1311 | 3 | CRIM 3321 | 3 | CRIM 3320 | 3 |
| HIST 1301 | 3 | ENGL 1302 | 3 | PSYC 3381/ SOCI 3381 | 3 | CRIM, adv. | 3 |
| MATH 1314 or MATH 1334 | 3 | HIST 1302 | 3 | CRIM, adv. | 3 | CRIM, adv. | 3 |
| SOCI 1201 | 2 | POLS 2301 | 3 | CRIM, adv. | 3 | Elective, adv. | 3 |
| SOCI 1301 | 3 | [^] Visual/performing arts | <u>3</u> | Minor | <u>3</u> | Minor, adv. | <u>3</u> |
| [^] Kinesiology | <u>1</u> | | 15 | | 15 | | 15 |
| | 15 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 or ENGL 2362 | 3 | [^] Global learning | 3 | CRIM 4382 | 3 | CRIM 4321 | 3 |
| POLS 2302 | 3 | [^] Natural sciences | 4 | CRIM, adv. | 3 | CRIM 4325 | 3 |
| PSYC 2301 | 3 | Elective | 3 | CRIM, adv. | 3 | CRIM, adv. | 3 |
| [^] Natural sciences | 4 | Kinesiology | 1 | Elective, adv. | 3 | Elective | 3 |
| Minor | <u>3</u> | Minor | <u>3</u> | Minor, adv. | <u>3</u> | Minor, adv. | <u>3</u> |
| | 16 | | 14 | | 15 | | 15 |

Total Hours Reqd: 120

**Degree Requirements
Bachelor of Arts
Psychology**

| | | | | | | | |
|---------------------------|----------|------------------------------|----------|--------------------|----------|------------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ENGL 1301 | 3 | COMS 1311 | 3 | PSYC 4322 | 3 | PSYC 3301, | 3 |
| HIST 1301 | 3 | ENGL 1302 | 3 | PSYC 4325 | 3 | PSYC 4302 or | |
| MATH 1314 or MATH 1324 | 3 | HIST 1302 | 3 | Elective, adv. | 3 | PSYC 4308 | |
| PSYC 2301 | 3 | PSYC 2302 | 3 | Kinesiology | 1 | PSYC 3381 | 3 |
| SOCI 1201 | 2 | Minor | <u>3</u> | Minor | 3 | Elective, adv. | 3 |
| Kinesiology | <u>1</u> | | 15 | Foreign language | <u>3</u> | Minor, adv. | 3 |
| | 15 | | | | 16 | Foreign language | <u>3</u> |
| | | | | | | | 15 |
| Sophomore Year | | | | Senior Year | | | |
| ARTS/MUSI/ THEA 2301 | 3 | ENGL 2362 | 3 | PSYC 3304, | 3 | PSYC 3387 | 3 |
| ENGL 2342 | 3 | POLS 2302 | 3 | PSYC 4312, or | | PSYC 4323 | 3 |
| POLS 2301 | 3 | [^] Global learning | 3 | PSYC 4328 | | Minor, adv. | 3 |
| +Lab Science | <u>4</u> | +Lab Science | 4 | Elective, adv. | 3 | Minor, adv. | 3 |
| | 13 | Minor | <u>3</u> | Elective, adv. | 3 | Foreign language | <u>3</u> |
| | | | 16 | Foreign language | 3 | | 15 |
| | | | | PSYC, adv. | <u>3</u> | | |
| | | | | | 15 | | |

Total Hours Reqd: 120

+BIOL or CHEM recommended

[^]For courses listed under Core Curriculum Components see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

**Degree Requirements
Bachelor of Arts
Sociology**

| | | | | | | | |
|---------------------------|----------|---------------------------|----------|------------------------------|----------|----------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ENGL 1301 | 3 | ENGL 1302 | 3 | SOCI 3381 | 3 | SOCI 4382 | 3 |
| HIST 1301 | 3 | HIST 1302 | 3 | [^] Global learning | 3 | Elective, adv. | 3 |
| SOCI 1201 | 2 | +Lab Science | 4 | Elective, adv. | 3 | Kinesiology | 1 |
| SOCI 1301 | 3 | Foreign language | 3 | Minor | 3 | Minor | 3 |
| Kinesiology | 1 | SOCI | <u>3</u> | SOCI, adv. | <u>3</u> | SOCI, adv. | <u>3</u> |
| Foreign language | <u>3</u> | | 16 | | 15 | | 13 |
| | 15 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 or ENGL 2362 | 3 | ARTS/MUSI/ THEA 2301 | 3 | SOCI 4383 | 3 | Elective, adv. | 3 |
| MATH 1314 or MATH 1334 | 3 | COMS 1311 | 3 | Elective | 3 | Minor, adv. | 3 |
| POLS 2301 | 3 | ENGL 2342 or ENGL 2362 | 3 | Elective, adv. | 3 | Minor, adv. | 3 |
| +Lab Science | 4 | SOCI | 3 | Minor, adv. | <u>3</u> | SOCI, adv. | 3 |
| Foreign language | <u>3</u> | Foreign language | <u>3</u> | Minor, adv. | 15 | SOCI, adv. | <u>3</u> |
| | 16 | | 15 | | | | 15 |

Total Hours Reqd: 120

+BIOL or CHEM recommended

**Degree Requirements
Bachelor of Social Work**

| | | | | | | | |
|---------------------------|----------|------------------------------|----------|---------------------------|----------|----------------|----------|
| Freshman Year | | | | Junior Year | | | |
| ENGL 1301 | 3 | ARTS/MUSI/ THEA 2301 | 3 | PSYC 3381 or SOCI 3381 | 3 | PSYC 4325 | 3 |
| HIST 1301 | 3 | COMS 1311 | 3 | SCWK 3335 | 3 | SCWK 4324 | 3 |
| MATH 1314 or MATH 1334 | 3 | ENGL 1302 | 3 | SCWK 3337 | 3 | Elective | 3 |
| SOCI 1201 | 2 | HIST 1302 | 3 | SWBS 2302 | 3 | Elective | 3 |
| SOCI 1301 | 3 | POLS 2301 | <u>3</u> | Elective | <u>3</u> | Elective, adv. | <u>3</u> |
| Kinesiology | <u>1</u> | | 15 | | 15 | | 15 |
| | 15 | | | | | | |
| Sophomore Year | | | | Senior Year | | | |
| ENGL 2342 | 3 | ENGL 2362 | 3 | SCWK 4325 | 3 | SCWK 4326 | 3 |
| POLS 2302 | 3 | PSYC 2308 | 3 | SCWK 4641 | 6 | SCWK 4345 | 3 |
| SCWK 2331 | 3 | SCWK 2333 | 3 | SOCI 4307 | 3 | SCWK 4347 | 3 |
| Kinesiology | 1 | [^] Global learning | 3 | Elective, adv. | <u>3</u> | SCWK 4643 | <u>6</u> |
| +Lab Science | <u>4</u> | +Lab Science | <u>4</u> | | 15 | | 15 |
| | 14 | | 16 | | | | |

Total Hours Reqd: 120

+Human biology recommended

^For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in an earlier section of this Catalog.

RELIGION (RELG)

Director

Baptist Student Ministries. MSC 205. Telephone 592-9335.

Credit toward university degrees is given for courses offered by an off-campus Bible Chair, under regulations that maintain their equivalence with other courses given at the university. The instructor is under the control of some permanent religious organization of recognized standing, possesses at least the training of instructors in the university, and is approved by the Dean of Arts and Sciences, Provost and Vice President for Academic Affairs and the President. Religious studies courses are subject to the same regulations and supervision as regular courses given in the university.

1111. The Book of Romans. 1(1-0)
A study of the Book of Romans, emphasizing the central religious teachings of the Apostle Paul.

1138. Marriage and Morals. 1(1-0)
The Christian ideal of married life and the practical problems faced before and after marriage and their suggested solutions.

1301. Old Testament Survey. 3(3-0)
Old Testament origin, literature, history and content from the beginning to the Maccabean period.

1303. New Testament Survey. 3(3-0)
New Testament, origin, literature, history and content from the Maccabean period to the close of the Apostolic age.

2303. Life and Teachings of Jesus. 3(3-0)
The life, teaching and significance of Jesus as revealed in the gospels.

2306. Life and Letters of Paul. 3(3-0)
The life of Paul, the work of Paul and an attempt to understand his contributions to the early Church as well as his continuing significance in ethics and doctrines of Christianity.

2311. Christian Ethics. 3(3-0)
An introduction to Christian ethics which sets forth the Biblical foundations for Christian ethical decision and applies these precepts to major ethical problems. These problems will include the self, marriage and the family, race relations, economic life and political life.

3339. Comparative Religions. 3(3-0)
Survey of the religions of the world. Included are studies in the origin, development, literature (scripture) and present status of Hinduism, Buddhism, Jainism, Confucianism, Taoism, Shinto, Judaism, Christianity and Islam.

WOMEN'S STUDIES (WMST)

Women's Studies is based on the premise that an educated person, regardless of discipline, needs to understand the contemporary world at both personal and societal levels. The minor in Women's Studies provides an integral understanding of forces at work in a multicultural, pluralistic society. This minor relates to various careers such as counseling, business, personnel management, social work, advertising, law, politics and education.

A minor in Women's Studies requires 18 semester hours, including SOCI 2363/WMST 2363 and SOCI 4364/WMST 4300, the core courses. The remaining 12 semester hours may be selected from the following six courses:

PSYC 3313/WMST 3313
PSYC 2305/WMST 2305
ARTS 3302/MUSI 3302/THEA 3302/WMST 3302
HIST 4360/WMST 4360
POLS 4364/WMST 4364
ENGL 4370/WMST 4370 (only when taught from a women's studies perspective)

2305. Women's Issues in Health and Psychology. 3(3-0)

Examines health and psychological issues for women, legal and political realities that influence women's emotional and physical well-being and important aspects of intimacy and sexuality with a focus on both physiological and psychological development. Credit may be obtained in only one of EDHL 2305, PSYC 2305 or WMST 2305.

2363. Women, Change and Society. 3(3-0)

A comprehensive survey utilizing political, historical and sociological factors to analyze the status of American women. Aspects of sex role socialization, institutional interaction, social problems and social movements are analyzed. Prerequisite: SOCI 1301 or 6 hours of social science. Credit may not be obtained in both SOCI 2363 and WMST 2363.

3302. Women and the Arts. 3(3-0)

Issues surrounding the participation of women in the arts. Selected women who have contributed to the visual and performing arts throughout history are studied in relation to the culture of their time and the principles related to the arts. No previous experience in theatre, art or music required. Prerequisite: completion of visual/performing arts component requirement. Credit may be obtained in only one of ARTS 3302, MUSI 3302, THEA 3302 or WMST 3302.

3313. Psychology of Women. 3(3-0)

An overview of the broad range of psychological issues and biological events which are of significant relevance to women. Explores the richness of the female experience in terms of changing values, attitudes and expectations. Prerequisite: 6 hours of Psychology. Credit may not be obtained in both PSYC 3313 and WMST 3313.

4300. Minority Women in U.S. Society. 3(3-0)

An integrated study of the impact that socioeconomic and ethnic/racial factors have on minority women within the United States. Prerequisite: SOCI 1301 or 6 hours of social science. Credit may not be obtained in both SOCI 4364 and WMST 4300.

4360. Women in History. 3(3-0)

Investigation of the social, economic and political position of women from the Renaissance to contemporary America and a comparison of the ideal expounded by different historical epochs with woman's actual role in each society. Prerequisite: 12 semester hours of History and/or Political Science. Credit may not be obtained in both HIST 4360 and WMST 4360.

4364. Women and Politics. 3(3-0)

Description, analysis and assessment of women's place in a democracy through a focus on women's capacity to relate to and use political power. Prerequisite: 6 semester hours of Political Science. Credit may not be obtained in both POLS 4364 and WMST 4364.

4370. Nature and Women in the American Novel. 3(3-0)

Nature and women have been problematic for American society and, thus, American literature. Nature has been seen both as an early Hell populated by Indian "devils" and as a second Garden of Eden. Similarly, as a group, women have been regarded both as latter-day Eves and as "angels in the house." This course will address these two topics and show the development of the themes concerning them. Students will understand something of the role of nature and of women (as a class) in shaping and reflecting American thought and values. Credit may not be obtained in both ENGL 4370, when taught from a women's studies perspective and WMST 4370.

NATURAL TOXINS RESEARCH CENTER (NTRC)

John C. Perez, *Director and Regents Professor*

Elda E. Sanchez, *Assistant Director*

Nora Diaz DeLeon, *Administrative Officer*

Luis Manuel Salguiero, *Biochemist*

Javier Martinez, *Research Scientist*

Rene Palomar, *Research Technician*

Gonzalo Lopez, *Research Assistant II*

Juan C. Lopez Johnston, *Curator/Supervisor*

Lucy Arispe, *Animal Room Technician*

Julia Braswell, *Research Assistant*

<http://ntri.tamuk.edu>

The Natural Toxins Research Center (NTRC) at Texas A&M University-Kingsville was established in 2002. The mission of the NTRC is to provide global research, training and resources that will lead to the discovery of medically important toxins found in snake venoms.

The objectives of the NTRC are to: 1) provide reliable sources of venoms and other products, 2) breed venomous snakes in captivity that are endangered or difficult to acquire, 3) characterize medically important venoms by electrophoretic titration (ET), high performance liquid chromatography (HPLC) and enzyme activities and 4) develop an Internet database that will be useful to investigators. The database will allow the user to view the snakes, venoms and their geographic distribution. The NTRC is recognized for its elaborate serpentarium with 6,300 square feet of space and currently houses over 400 snakes. The facility is computer-controlled and the temperature and photo period of individual rooms and cages can be regulated. The facility was designed with expansion in mind and has the capacity for 660 snakes.

SOUTHWEST BORDERLANDS RESEARCH CENTER (SWBRC)

Kleberg Hall. Extension 2761

The function of the Southwest Borderlands Research Center is a repository for various types of data and analytical information concerning community and economic development. The center also engages students in the process of furnishing information to, and directing project for public, private and nonprofit organizations.

The center can furnish data and services such as:

- database design and construction
- data collection and entry
- spatial analysis
- data visualization
- data dissemination
- statistical analysis
- graphics design and construction
- internal and external database management services

Certificate Program

A certificate program is aimed primarily at the practical needs of professionals, teachers, business and industrial personnel, governmental agencies and social service workers. The program requires attendance and active participation in seminars, workshops and conferences organized by the center and offered throughout the year that focus on Southwest borderlands regional development. A certificate is awarded to participants completing 18 hours documenting expertise in Southwest Borderlands Research and Studies. Continuing Education Units are also offered for those functions planned in conjunction with the Center for Distance Learning and Continuing Education.