The College of Arts and Sciences, in its present configuration, was formed in 1986 following the merger of three distinct divisions. This School exists to meet the needs of the university, to complement the other academic units, and to help students realize personal, professional, and vocational objectives. The departments and programs in the School offer courses for the core curriculum in general education, provide course support for other programs, and develop innovative elective units in addition to required undergraduate and graduate courses for majors and minors. Faculty and staff in Arts and Sciences pride themselves in being student centered, in being service oriented, in being able to answer questions or solve problems, and in maintaining a friendly and open environment conducive to learning.

The College of Arts and Sciences consists of the following seven departments:

- Academic Center for Excellence
- Behavioral and Social Sciences
- Biological and Earth Physical Sciences
- Computer Science and Mathematics
- Fine Arts and Communication
- Languages and Literature
- The College of Arts and Sciences also includes the Rio Grande Research Center, a research center promoting and engaged in scientific research.

The College of Arts and Sciences promotes and coordinates international educational travel opportunities among the various departments.

**Degree Programs in the Arts and Sciences:**

1. Bachelor of Arts with majors in Communication, English, General Studies, History, Psychology, Social Science, and Spanish;
2. Bachelor of Fine Arts with majors in Art and in Theatre;
3. Bachelor of Science with majors in Biology, Chemistry, Computer Science, Environmental Studies, Geology, and Mathematics;
4. Master of Arts with majors in English, History, Liberal Arts, Political Science-Public Administration;
5. Master of Science with majors in Biology and Geology.
ACADEMIC CENTER FOR EXCELLENCE
SRSU Honors Program, Academic Learning Center, Developmental Courses

Academic Center for Excellence
College of Arts and Sciences
Office: Ferguson Hall 214
Phone: (432) 837-8408
FAX: (432)837-8317
E-mail: ace@sulross.edu

Director and Assistant Professor of English: Kathy K. Stein, Ed.D.
Lecturers: Chris Garcia, M.A., Alex Hardison, B.S., and Julie Vega, M.A.
Academic Enhancement Seminars: Chris Garcia
SRSU Honors Program: Kathy K. Stein

Program Description
The Academic Center for Excellence (ACE) provides a myriad of multifaceted services intended to support all students and academic programs at Sul Ross State University. To this endeavor, ACE provides an Academic Learning Center (ALC) which aids in helping students learn methods and techniques of studying as well as critical thinking. ACE also offers course work for students in need of satisfying the Texas Success Initiative (TSI) and for those preparing to enter the Teacher Certification Program. ACE also provides facilities, organization, and coordination for the SRSU Honors Program. The SRSU Honors Program challenges students to conceptualize, analyze, and learn subject material in a different way. By incorporating and bringing together these disparate student bodies, an environment of understanding, camaraderie, and cooperation is created. ACE works closely to help students adjust and adapt to college life and to succeed in their life-long learning experience.

Academic Learning Center
The Academic Learning Center (ALC) is located in Ferguson Hall 213. The ALC provides students with access to one-on-one and small group tutoring for reading, writing, and mathematics. The Learning Center also makes computers and software available to students. Students can access the online program PLATO through the ALC. Reference materials available in the ALC include study materials for the Texas Success Initiative Assessment (TSIA), the Graduate Record Examination (GRE), and class specific texts and study guides.

The Learning Center also makes Academic Enhancement Seminars available to students. Each semester, a series of seminars is conducted to give students the opportunity to gain and hone their academic skills and address such topics as developing and recognizing effective academic practices.

Developmental Education
The developmental education courses are designed to target deficiencies as identified by the criteria established in the Texas Success Initiative (TSI). Students initially enrolling into Sul Ross State University who do not meet the College Readiness Standards must take a state approved assessment.
meant to identify needs in reading, writing, and mathematics. Students must pass all developmental courses for which they have shown a need prior to attempting any college level courses related to one of the three areas.

**College Readiness Exemptions**

- **ACT**: 23 composite score; minimum of 19 on both English and Mathematics tests
- **SAT**: 1070 combined score; minimum of 500 on both verbal and mathematics sections
- **TAKS**: 2200 minimum on both the English/Language Arts and Mathematics and a minimum of 3 on writing sub-score.

**DEVELOPMENTAL EDUCATION COURSES**

**Education**

*0300 Reading Skills (3-0)*. This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the reading portion of the assessment. In this course, students will develop reading and study skills. Topics included in this course are defining vocabulary in context; identifying stated, implied main ideas and central point; identifying details that support and differentiate between fact or fiction; identifying author's purpose and tone; determining points and support of a critical argument. This course will emphasize correction of reading problems identified through diagnosis. Credit in this course cannot be used to satisfy requirements for any degree. Students must earn a grade of C or better to progress to any intensive reading course. (ED 0300)

**English**

*0300 Writing Skills (3-0)*. This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the writing portion of the assessment. In this course, students will develop their writing and reading skills through daily exposure to writing and reading exercises. Topics included in this course are grammar, sentence structure, paragraph development, and essay writing. Areas which will be emphasized for essay writing are appropriateness, unity and focus, development, and organization. Credit in this course cannot be used to satisfy requirements for any degree. Students must earn a grade of C or better to progress to ENG 1301. (ENG 0300)

*0310 Integrated Reading and Writing Skills (3-0)*. This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the writing and/or reading portion of the assessment. The focus of the course will be on applying critical reading skills for organizing, analyzing, and retaining material and developing written work appropriate to the audience, purpose, situation, and length of the assignment. The course integrates preparation in basic academic reading skills in writing a variety of academic essays. Credit in this course cannot be used to satisfy requirements for any degree. Prerequisite: C or better in ENG 0300 or ED 0300 OR satisfactory score on placement exam.
Mathematics

0300 Introductory Algebra (3-0). This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the mathematics portion of the assessment. Topics included in this course are algebraic operations on real numbers, the solving of equations and inequalities, basic operations with polynomials, simple graphing techniques, critical thinking skills, and college readiness skills. Credit in this course cannot be used to satisfy requirements for any degree. Students must earn a grade of C or better to progress to the next level math course. (MATH 0300)

0301 Intermediate Algebra (3-0). This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the mathematics portion of the assessment. Topics included in this course are real numbers, exponential, rational, and radical expressions, factoring, complex numbers, and critical thinking skills. Credit in this course cannot be used to satisfy requirements for any degree. Students must earn a grade of C or better to progress to the next level math course. (MATH 0301)
Prerequisite: C or better in MATH 0300 or satisfactory score on placement exam.

SRSU Honors Program
The Sul Ross State University Honors Program is a challenging and an integrative program of academic experiences with a high degree of student and faculty interchange designed to stimulate the more motivated student. This program offers the outstanding student an opportunity to take intellectually motivating seminars. It is not an accelerated program but an in-depth approach to the understanding of ideas and relationships. The program offers students a chance to go beyond the norms of the traditional classroom experience and explore with a greater intensity more challenging concepts and issues while applying critical thinking to the learning experience.

A student who completes a minimum of 24 credit hours in honors classes with a GPA of 3.50 or higher and a cumulative GPA of 3.30 or higher will earn the designation Graduate in Honors Studies. This designation will be imprinted on each student’s transcript. Students are encouraged to apply to the SRSU Honors Program by completing an application. Contact the Academic Center for Excellence for more information on applying to the SRSU Honors Program.

Honor Courses
1301 Honors First-Year Seminar: Communications (3-0). This is an introductory Honors course emphasizing oral and written communication skills. This course is designed to introduce students to the tools required for independent research and presentation of results. Topics vary. This course would fulfill the Oral Communications core requirement. (HONS 1301)
Prerequisite: Admission into the Honors Program or consent of the instructor.

1302 Honors First-Year Seminar: English (3-0). This is an introductory Honors course emphasizing the development of composition, rhetoric, and research skills. Students will write expository, analytical, and persuasive papers and read a variety of materials. The course meets the second half of
the freshman composition core requirement. (HONS 1302)
Prerequisite: Consent of instructor and either admission to the Honors Program or ENG 1301.

1303 Honors First-Year Seminar: Fine Arts (3-0). This is an introductory Honors course emphasizing the development of critical thinking skills through the study of topics in the visual and performing arts. Topics vary. This course would fulfill the Fine Arts core requirement. (HONS 1303)
Prerequisite: Consent of the instructor and either admission to the Honors Program or ENG 1301.

1304 Honors First-Year Seminar: Social Sciences (3-0). This is an introductory Honors course emphasizing the development of critical thinking skills through the study of topics in the behavioral and social sciences. Topics vary. This course would fulfill the Social Science core requirement. (HONS 1304)
Prerequisite: Admission into the Honors Program or consent of the instructor.

2301 Honors Literature Studies (3-0). This course presents a study of literary types, which may include prose, fiction, poetry and drama. The course topics may come from, but are not limited to, multicultural literature, rural writers, Arthurian legends, detective fiction, autobiography, and contemporary poetry. (HONS 2301)
Prerequisite: Completion of the freshman English requirement and one of the following: admission into the Honors Program or consent of the instructor.

2401 Honors Integrated Life Sciences (4-1). This course presents an integrated study of life sciences. Topics that may be addressed will come from, but are not limited to, human anatomy and physiology, botany and zoology. Topics vary. This course would fulfill 4 semester hours from the Lab Science core requirement. (HONS 2401)
Prerequisite: Biology 1401 or Biology 1402.

3301 Honors Seminar in Integrated Social Sciences (3-0). This course presents an integrated study of social sciences. Topics to be addressed will come from, but are not limited to, world civilizations, women in society and cultural studies. This course may be repeated one time for credit. This course would fulfill the Multicultural core requirement or could be used as an upper level elective. (HONS 3301)
Prerequisite: Admission into the Honors Program or consent of the instructor.

3302 Honors Seminar in Fine Arts (3-0). This course presents the study of the interrelationships of the various disciplines as they relate to the presentations of art, film, stage plays and music. Course may be repeated one time for credit. This course would fulfill the Fine Arts core requirement or could be used as an upper level elective. (HONS 3301)
Prerequisite: Admission in the Honors Program or consent of the instructor.

4300 Individual Honors Research (3-0). This course is intended for students working independently under the guidance of a graduate faculty member. This course may be repeated one time for credit. This course would be used to fulfill an upper level elective. (HONS 4300)
Prerequisite: Admission into the Honors Program and consent of the Director of the Honors Program.
Department of Behavioral and Social Sciences
College of Arts and Sciences
Office: Lawrence Hall 208
Phone: (432)837-8157
FAX: (432)837-8146
E-mail: jdowning@sulross.edu

Professor and Chair: James Downing, Ph.D.
Professors: Jim D. Case, Ph.D., Dale B. Christophersen, Ph.D.,
David L. Cockrum, Ph.D., Mark S. Saka, Ph.D. and Paul A. Wright, Ph.D.
Associate Professors: Judith A. Parsons, M.A., Andrea Powers, Ph.D.,
and Mark C. Emerson, Ph.D.
Assistant Professors: Amy Moreland, Ph.D., David Watson, M.A.

Program Description
The Department of Behavioral and Social Sciences offers course work leading to the Bachelor of Arts degrees in History, Psychology, and Social Science. Anthropology, Geography, Mexican American Studies, Political Science, and Sociology are offered as minor fields of study only. In addition, limited course work is offered in Philosophy. Teacher certification is available in History and Social Science, (Economics, Geography, Political Science, Psychology, and Sociology). The Pre-Law program is also housed in Behavioral and Social Sciences. At the graduate level, the department offers the Master of Arts degrees in History, and Public Administration. The department has a limited number of graduate Teaching Assistantships for graduate students in History and Public Administration. For additional information about the assistantships, contact the department chair.

The Behavioral and Social Sciences faculty is engaged in a wide-range of research with international, national, and regional foci. There has been a tradition of research addressing Trans-Pecos/Big Bend issues as well as cross-cultural research in Mexico. The Center for Big Bend Studies and the Museum of the Big Bend are closely associated with the department and provide students opportunities for archeological and historical research. The Department of Behavioral and Social Sciences also provides educational opportunities through international travel in Europe and Mexico.

The Texas state legal requirements for course work in United States history and federal and Texas government are met by courses taught in this department. These requirements may be met in a variety of ways indicated in the course descriptions for the appropriate discipline.

The Department sponsors a number of honorary societies and clubs, including: Phi Alpha Theta, the national history honorary society. Pi Sigma Alpha, the national political science honorary society, and Psi Chi, the international psychology honor society, the Pre-Law Association, a group
which furthers the interests of those students preparing for law School and the Psychology Association, a student organization for psychology majors.

As with all Sul Ross students, students majoring in an academic area within the Department of Behavioral and Social Sciences are required to take a major field assessment examination during the semester in which they graduate. Students should contact their major field advisors concerning specifics of the examinations.

**Career Opportunities:**
Each program in the department is designed to provide an educational experience which will lead to career and graduate opportunities for the students.

**History**
- Education
- Government/Public Administration
- Journalism
- Museum and Archival careers
- Writing and Editing
- Businesses which seek employees with liberal arts backgrounds

**Preparing for:**
- Law School
- Paralegal careers
- Graduate Museum and Archive Programs
- Graduate History Programs

**Political Science**
- Education
- Government/Public Administration
- Businesses which seek employees with liberal arts backgrounds
- Public Relations Minority Affairs
- Political Science Education Research
- Government Related Business
- Federal, State, and Local Agencies/Public Administration
- Private Non-Profit Agencies Journalism
- Businesses which seek employees with liberal arts backgrounds

**Preparing for:**
- Law School
- Paralegal careers
- Graduate Political Science Programs

**Psychology**
- Education
- Research
- Residential treatment center counselors
- Social workers and child protective service workers
- Personnel Analyst
- Interviewer
- Management positions
- Mental Health/Mental Retardation Case Managers
- Law Enforcement, Correction, and Probation Officers
- Other government and private industry positions requiring a liberal arts background

**Preparing for:**
- Law School
Paralegal careers
Social Work Programs
Graduate Psychology Programs

Social Science Education
Businesses which seek employees with liberal arts backgrounds Preparatory for:
Law School
Paralegal careers

Features
The department is located in Lawrence Hall and works in cooperation with, the Museum of the Big Bend. Two psychology labs are maintained to provide undergraduate and graduate psychology students with modern facilities to conduct on-site research. In addition to faculty offices, office space for history and political science graduate teaching assistants is available.

Scholarships
Clifford B. Casey History Scholarships. The applicant must be a graduate history major or an undergraduate history major or minor. Social Sciences majors are eligible. Students must have an overall GPA of 3.0 or better, as well as a history GPA of 3.0 or better. Graduate students must have a satisfactory score on the GRE, a GPA of 3.0 in the last 60 hours of course work in their undergraduate degree program, and a GPA of 3.0 in prior history course work.

Ernest C. Shearer Memorial Scholarships. The recipient must be a history major with at least one semester of course work remaining at Sul Ross State University, be in good standing with the university, have a strong academic record in history, and show promise as a history student.

George J. Merriman III Memorial Scholarship. Applicants must be majors in the Arts and Sciences School with preference given to English and History majors. Freshman applicants must be unconditionally admitted and must have graduated in the upper quarter of their high School graduating class. Applicants who are continuing students must be full time students in good academic and disciplinary standing with a GPA of 3.0 or higher.

Benedict-Dowell Memorial Scholarship. The applicant must be a full time graduate or undergraduate student in good academic and disciplinary standing, be an active member of the Pre-Law Association, should be an active participant in class work especially targeted for pre-law students, must have and maintain at least a 3.0 GPA or, if an entering freshman applicant, must have an ACT composite score of at least 24 (or equivalent SAT score), and should demonstrate public interest activity external to the University.

Henry Bertrand, Jr. Memorial Scholarship. The applicant must be a full-time sophomore, junior, and/or senior majoring in Political Science with an overall grade point average of 3.0 or better.

M. Abelardo Baeza Merit Scholarship. The applicant must be a graduate of Alpine High School. If the applicant is a returning student, the student must have a 3.0 GPA. Preference will be given to Mexican American Studies majors.
The minor in Anthropology requires eighteen semester credit hours of Anthropology course work with six of the semester credit hours being advanced.

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

**UNDERGRADUATE COURSES IN ANTHROPOLOGY**

1301 *Cultural Anthropology* (3-0). A survey of the study of cultural anthropology, including the nature of culture in space and time, human subsistence and settlement, social and political organization, ritual and religion, and linguistics. The course will include an overview of the adaptations of human populations to arid regions. (ANTH2351)

1302 *Introduction to Archeology* (3-0). An introduction to the history, development, techniques, and underlying principles of archeological sciences. The focus of the class is on archeological methodology and theory as practiced within a framework or interdisciplinary research, and as viewed from both scientific and humanistic perspectives. (ANTH 2302)

2301 *Archaeology of Texas and Northern Mexico* (3-0). An introduction to Native American prehistory from 10,000 B.C. through early contact with Spanish entrada during the sixteenth and seventeenth centuries A.D. in Texas and north-central Mexico. The course will explore basic archeological theory, data collection, and analytical techniques used in the reconstruction of life ways of nomadic, semi-sedentary, and sedentary human populations through time.

2302 *Environmental and Cultural Diversity* (3-0). This course examines the dynamic interplay between environment and culture among prehistoric, historic, and contemporary peoples on a global basis. Ethnographic studies are used to facilitate comparative analysis of cultures in both similar and widely differing environmental settings, from Arctic tundra to shifting sands of the Sahara. Emphasis is on the study of present-day "simple" societies, and includes evaluation of the use of analogy in reconstructing life ways of extinct cultures.

2303 *Readings and Research*. Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

3301 *Laboratory Techniques in Archeology* (3-0). Provides practical experience on the conceptualization, design, and conducting of archeological projects, with emphases on techniques of laboratory analysis, data quantification, analogy, and the interpretation of findings.

3601 *Summer Archeological Field School* (0-6). An intensive six week summer field course that provides hands-on training for students in archeological field and analytical techniques, including site survey and recording, instrument mapping, site testing and evaluation, controlled excavation, and field laboratory techniques: Location to be announced. Prerequisite: Anthropology 2301 or consent of instructor.
4308 Readings and Research in Anthropology (3-0). Selected readings on research projects to be offered as individual study to meet student needs. May be repeated once for credit with departmental approval.

4311 Special Topics in Anthropology (3-0). Special courses on topics not included in the regular curriculum. May be repeated for credit with departmental approval.

GEOGRAPHY

Geography as a Minor

A minor in Geography may be obtained by taking a minimum of nineteen semester credit hours. Students are required to take Geography 1302, Geography 2302, and Geography 3401/Geology 3401. An academic concentration in the Geography minor may be developed by taking, in addition to the required core, Geography 2305, Geography 3412/Geology 3412, and an additional three semester credit hours in Geography. A technical concentration may be developed by taking, in addition to the core, nine additional semester credit hours to include Geology 2407, Geology 3412/Geography 3412, and an additional three semester credit hours of Geography or Geology as recommended by advisor.

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

UNDERGRADUATE COURSES IN GEOGRAPHY

1302 World Regional Geography (3-0). A regional study of the world in a survey course which uses the basic elements as tools for observation and analysis in revealing the interrelationships of features involving man and different areas of the earth. (GEOG 1303)

2302 Geography of the United States and Canada (3-0). An overview of significant physical and human elements of the United States and Canada and their relationships within a setting of fourteen specific regions.

2307 Economic Geography (3-0). Introduces the principles that explain the locations of economic activities. Actual patterns of economic activity are compared to what would be predicted from the principles and reasons advanced for the discrepancies. Visits are made to local economic enterprises to learn about locational decisions and economic organizations.

2308 Readings and Research. Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

3301 Geography of Texas (3-0). A topical study of the physical and cultural elements of Texas which reveal the great diversity of a growing and vibrant state. Features examined include the landscape, cultural groups, and various economic activities

3302 Readings and Research in Geography (3-0). An individualized course with varying topics to be chosen by the instructor in consultation with the student. May be repeated once.
3303 Special Topics in Geography (3-0). Selected topics in Geography. May be repeated for credit when the topic varies.

3401 Interdisciplinary Geographic Information Systems (2-4). This course is designed to introduce the concepts of computer-based spatial data handling, referred to as geographic information systems (GIS). The interdisciplinary approach focuses on bringing students from diverse academic backgrounds together in a team effort to learn the fundamentals of GIS, including data, sources, input, manipulation, and output presentation. There are no prerequisites, but it is recommended that the student have completed an introductory class in one of the following: geology, biology, natural resource management, or archaeology. This course is cross-referenced with Geology 3401.

3412 Geomorphology (3-3). An introduction to surficial processes and landforms. Understanding the landscape upon which we live and depend can be of vital importance to nearly everyone from the homeowner to the civil engineer. Fluvial, glacial, costal, groundwater and weathering processes will be studies along with lithological and structural influences. Labs will include map and photo interpretation and field studies. This course is cross-referenced with Geology 3412. Prerequisite: Geology 1401.

HISTORY

Texas State Legal Requirements in History: History 1301 and 1302 are the courses normally taken to satisfy the six semester hour requirement in United States History as specified in the state law. All courses marked with an asterisk (*) may be used to meet the Texas State Legal Requirement, but students must have Junior status or the permission of the instructor to take advanced courses (3000-4000 level) to fulfill the requirement. Students may also satisfy the Texas State Legal Requirement in History with History credit received through the CLEP program.

Phi Alpha Theta: The History faculty sponsors a chapter of Phi Alpha Theta, the national history honorary society.

Bachelor of Arts
(History Major-120 hours)

| Hours |
|-----------------------------|---|
| History Major .......................... | 30 |
| History 2301, 2302, and 3311 ........................................ | 9 |
| 21 SCH (15 SCH advanced) ........................................ | 21 |
| Electives .................................. | 12 |
| English 1301, 1302, 2301 or other literature, and 3 SCH sophomore or Advanced Communication 1303 or Theatre 2304 ....................... | 3 |
| Fine Arts: select 3 SCH from Fine Arts 1301; Art 1301; Music 1312, 1313; or Theatre 1302 plus an additional 3 SCH from art, journalism, music/theatre, or IT 2304 .......... | |
| Foreign Language .......................... | 6-8 |
| Multicultural .................................. | 3 |
| History 1301 & 1302 .......................... | 6 |
| Mathematics: select from 1310, 1315, 1316, or 1342 ................ | 3 |
| Physical Education 1150 and one activity course ................ | 2 |
| Political Science 2305 and 2306 .................. | 6 |
| Laboratory Science: select from Astronomy 1401, 1402; Biology 1401, 1402; Chemistry 1401, 1402; Geology 1401, 1402, 2404; | |

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Physics 1401, 1402, 2401, 2402 .......................................................... 8
Social Science: select from Economics 2300, 2305; Geography 1302, 2302; Philosophy 1301; Psychology 1302; Sociology 2303, Anthropology 1301 ................................................................. 3
Minor ........................................................................................................ 18

TOTAL 120

Bachelor of Arts (History Major)

The following is a suggested sequence of courses for students seeking the Bachelor of Arts degree with a major in History.

<table>
<thead>
<tr>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Freshman Year</td>
</tr>
<tr>
<td>United States History ................................................................. 6</td>
</tr>
<tr>
<td>English 1301, 1302 ................................................................. 6</td>
</tr>
<tr>
<td>Math Requirement ................................................................. 3</td>
</tr>
<tr>
<td>Oral Communication Requirement ................................................. 3</td>
</tr>
<tr>
<td>Fine Arts Requirement .............................................................. 3</td>
</tr>
<tr>
<td>Science Requirement ................................................................. 8</td>
</tr>
<tr>
<td>Physical Education Requirement .................................................. 2</td>
</tr>
<tr>
<td>TOTAL 31</td>
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</tbody>
</table>

| Sophomore Year |
| Social Sciences requirement .......................................................... 3 |
| History 2301, 2302 ................................................................. 6 |
| Political Science 2305, 2306 ......................................................... 6 |
| English Literature course and one English 2000 or higher .................. 6 |
| Fine Arts Requirement .............................................................. 3 |
| Foreign Language Requirement ..................................................... 8 |
| TOTAL 32 |

| Junior Year |
| History 3311 + 3 other History courses ........................................... 15 |
| Minor ................................................................. 9 |
| Multicultural ................................................................. 3 |
| Electives ................................................................................. 3 |
| TOTAL 30 |

| Senior Year |
| History ................................................................. 9 |
| Minor ................................................................. 9 |
| Electives ................................................................................. 9 |
| TOTAL 27 |
| GRAND TOTAL 120 |

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HISTORY as a MINOR
18 SCH of History to include 6 SCH advanced.

Teacher Certification through the Post Baccalaureate Initial Certification Program

Students who want to teach History should follow this degree plan and consult with their major advisor and the Education Department to take the Education courses required for teacher certification. Some of these courses may be taken as Electives, or may be taken through the Education Department's Post Baccalaureate Initial Certification Program.

(History Major with Secondary Teacher Certification)

Students wanting to be certified to teach History in grades 8-12 must take the following History courses:

- History 2301
- History 2302
- History 3309
- History 3310
- History 3311
- Plus nine semester credit hours advanced History

UNDERGRADUATE COURSES IN HISTORY

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

*1301 History of the United States to 1877 (3-0). A general survey of the history of the United States from the discovery of the New World to 1877. (HIST 1301)

*1302 History of the United States Since 1877 (3-0). A general survey of the history of the United States from 1877 to the present time. (HIST 1302)

2301 World History to 1500 (3-0). A survey of world history from the ancient world until the end of the fifteenth century.

2302 World History Since 1500 (3-0). A survey of European history since the 15th century to the present.

2303 Readings and Research. Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

3300 Ancient Civilization (3-0). A history of the ancient civilizations of the Near East, Greece, and Rome to the 4th Century.

3301 The Middle Ages to 1350 (3-0). A history of the political, social, and intellectual development of medieval society to the 14th century.

3302 Europe During the Renaissance and Reformation to 1648 (3-0). A history of Europe from the mid-14th century to mid-17th century with particular emphasis on humanism in Italy and the religious revolt of the 16th century.
3303 Europe: Absolution to Revolution, 1648-1815 (3-0). A study of European history from the Treaty of Westphalia to the defeat of Napoleon. Emphasis on the scientific revolution, the English Revolution, French absolutism, the enlightenment, and the French Revolution and Napoleon.

3304 Europe the 19th Century, 1815-1919 (3-0). A history of the social, political, and economic factors that influenced industrialization, nationalism, Marxism, democracy, imperialism, and the outbreak of World War I.

3305 Europe since 1919 (3-0). A history of Europe from the Treaty of Versailles to the present.

3306 History of Native Americans (3-0). This course is designed to familiarize the student with the history, cultures, peoples, and religions of Native Americans. The course spans the pre-Colombian, colonial, early American, nineteenth and twentieth centuries' experience.

3307 History of Pre-Columbian and Colonial Mexico (3-0). This course examines the history of Mexico from its earliest beginnings through the civilizations of the Olmec, Maya, and Aztecs. The impact of the Spanish Conquest of Mexico and the subsequent colonial society through the Independence War of 1810-1821.

3308 History of Modern Mexico 1821-Present (3-0). This course begins with Mexican Independence in 1821 and continues through the present.

*3309 History of Texas (3-0). A survey of the history of Texas from the pre-historic Indian civilizations to the present, stressing cultural, political, and social developments.

*3310 History of the American West (3-0). A study of the American West during the nineteenth century, emphasizing the successive frontiers, such as explorers, the mountain men, the cattlemen, the railroads, and the farmers.

3311 The Study of History (3-0). An introduction to the techniques and the materials important to the study of history.

3312 American Foreign Policy and the Cold War 1945-1991 (3-0). This course covers the history of American Foreign Policy as it relates to the history of the U.S.-Soviet Cold War 1945-1991.

3313 Mexican-Americans in the History of the United States (3-0). Examines the roots and traditions of Mexican Americans, their emergence as a people, their historical presence in what is now the American Southwest, the emergence of the Chicano Movement, and their trajectory in American life.

3314 Blacks in the United States (3-0). Social, political, economic, and cultural history of African American in the United States since its beginnings. A comparison of the African American experience with the experiences of other Americans.

4301 The History of World Religions (3-0). This course is designed to introduce the student to the origins, beliefs and development of the world's major Abrahamic religions, Judaism, Christianity, and Islam.

4302 The Modern Middle East (3-0). This course covers the emergence of the Modern Middle East since the late nineteenth century through the collapse of the Ottoman Empire during World War I and the challenges faced by the nation states of the Middle East since 1919.
4303 The History of Russia 19th Century to the Present (3-0). This course examines social, economic, and political history in Russia from 1801 to the present. Emphasis is placed on understanding the changes as well as continuities in Russia under the tsars, commissars and beyond.

4304 History of Immigration and Ethnicity in America (3-0). This course examines the history of immigration and the issue of ethnicity and multiculturalism in the United States from the 18th century through the present. This course will focus on immigration from Europe and Asia from the early colonial era through the present.

4305 History of Modern Asia (3-0). The focus of this course is East Asia, that is, the Confucian societies of China, Korea, Vietnam, and Japanese model. The course begins with the late traditional era and proceeds to the present. Basic historiographical issues are introduced.

4306 Ancient Greece (3-0). Ancient Greece examines the history of Greece from Minoan and Mycenae origins to the rise of Alexander the Great. The course emphasizes the rise of the unique political, social, and cultural institutions and their importance in the formation of the modern world.

4307 Ancient Rome (3-0). Ancient Rome is an in-depth survey of the social, cultural, political and economic history of ancient Rome from its earliest beginnings until the reign of Justinian.

4316 Readings and Research (3-0). An individualized course with varying topics to be chosen by the instructor in consultation with the student. May be repeated once.

*4317 Special Topics (3-0). Selected Topics in areas of history. May be repeated for credit when the topic varies. When U.S. History is the topic, the course may be used to meet U.S. History requirements.

*4320 Twentieth Century America (3-0). A survey of or a thematic approach to 20th Century American history. Themes might include economic, cultural, political, or ethnic topics to name a few. Approaches will vary.

4321 History of American Women (3-0). A study of American women from the colonial period to modern times, emphasizing social, cultural, economic, and political development.

*4322 The Ranching Frontier in American History (3-0). A study of the development of cattle ranching in the American West from its Hispanic roots to the 20th century, with emphasis on the 19th century.

*4323 U.S. Civil War and Reconstruction (3-0). Explores the causes of the Civil War; the military, political, economic, and social aspects of the war; and the issues and results of Reconstruction.

GRADUATE PROGRAM IN HISTORY
(Master of Arts with a Major in History)

Graduate students in History may earn a Master of Arts degree with a minimum of 36 hours of study. The options are: the thesis option or the non-thesis option. The thesis option requires a minimum of 24 semester credit hours of course work in History and 6 sch of course work of thesis credit. The non-thesis option contains the following two options:
36 semester credit hours History program (36 sch History courses)
Major/minor plan 24-30 sch in History (6-12 sch in minor field)

The student will be required to assemble a committee of three advisors of which two must be in the field of history. At the completion of the coursework, the student will be required to take and pass written comprehensive exams. The comprehensive exams are to be taken at least fourteen days before date of graduation.

GRADUATE COURSES IN HISTORY

5302 Seminar in Texas History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5303 Seminar in Pre-Columbian and Colonial Mexican History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5304 Seminar in Modern Mexican History, 1821-Present. (3-0). Topics to be announced. May be repeated for credit as topic varies.

5305 Seminar in the Modern Middle East, 1914-Present. (3-0). Topics to be announced. May be repeated for credit as topic varies.

5308 Seminar in European History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5309 Seminar in Western History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5310 Seminar in American History (3-0). Topics to be announced. May be repeated for credit as topic varies.

5312 Readings and Research (3-0). An individualized course with varying topics to be chosen by the instructor in consultation with the student.

5313 Special Topics (3-0). Selected topics in areas of history. May be repeated for credit when topic varies.

6301 Thesis (0-6). Satisfactory completion of this course will result in an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study. The student will enroll each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made.

6302 Thesis (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the Dean of the School, and filed in the Office of the Provost and Vice President for Academic and Student Affairs.

MEXICAN AMERICAN STUDIES

The minor in Mexican American Studies is designed to meet the needs of students preparing for careers serving Mexican American constituencies, such as public and business administration, marketing, public relations,
education, politics, government, minority affairs, as well as careers in which one would work in an international or multicultural environment. The minor is also designed to prepare students for graduate and advanced professional study in programs in which a minority affairs focus would be an asset.

**Mexican American Studies as a Minor**

To complete a Mexican American Studies minor, students must earn at least 18 semester credit hours in courses approved for Mexican American Studies credit including MAS 2301 (Introduction to Mexican American Studies), MAS 3310 (Special Topics), and MAS 4309 (Senior Research Project). At least nine (9) semester hours must be at the upper division level.

Students must select their additional classes from a variety of other courses appropriate for the Mexican American Studies minor which are taught regularly or as special topics in a number of departments of Sul Ross. These include, but are not limited to:

- Spanish 2301, 2302; Anthropology 1301, 2301; Education 3308, BSL 3328, 3329; English 4301, 4302, 4304; History 3307, 3308, 3313; Mexican American Studies 3310, 4309; Political Science 3314, 4303; Psychology 3314, Sociology 3308; Spanish 3308, 3316.

### COURSES IN MEXICAN AMERICAN STUDIES (MAS)

- **2301 Introduction to Mexican American Studies (3-0).** Introduction to Mexican American culture, history, literature, music, world view, and place in both Mexican and American societies and nations.

- **2302 Readings and Research.** Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

- **3309 Language on the Border.** This course looks at language along the U.S.-Mexican border from linguistic, social and political perspectives. Topics will include bilingualism, bilingual education, cultural identity, language varieties, and code-switching.

- **3310 Special Topics (3-0).** Selected topics in the area of Mexican American Studies. May be repeated for credit when the topic varies.

- **3311 Folklore and Culture on the Texas-Mexican Border** Students are to become familiar with Mexican Revolution's history. Students will review the origin and history of Mexican Corridas. This course will be taught in English.

- **4309 Readings and Research (3-0).** Selected readings or research projects to be offered as individual study to meet student need. May be repeated for credit when the topic varies.

### PHILOSOPHY

**UNDERGRADUATE COURSES IN PHILOSOPHY**

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

- **1301 Introduction to Philosophy (3-0).** An introduction to the field of philosophy and its leading questions in metaphysics, epistemology,
philosophy of mind, ethics, social philosophy, existentialism, logic, and aesthetics. (PHIL 1301)

1302 Ethics (3-0). An introduction of systematic approaches to moral reasoning, including both normative ethics and metaethics as moral philosophy. Survey of approaches to judging the Tightness or wrongness of actions and judgments about the goodness or badness of things. (PHIL 2306)

1303 Logic (3-0). An introduction to logic emphasizing the nature of the rational process, types of reasoning, the scientific method, and fallacies. Sound reasoning skills are developed. (PHIL 2303)

2301 Special Topics in Philosophy (3-0). Selected topics in Philosophy. May be repeated for credit when the topic varies.

2302 Readings and Research in Philosophy (3-0). An individualized course with varying topics to be chosen by the instructor in consultation with the student. May be repeated once.

**POLITICAL SCIENCE**

Texas State Legal Requirement in Federal and State Government: A student may complete the six-semester-hour requirement in federal and state government for a baccalaureate degree in any one of the following ways:

1. Successfully completing Political Science 2305 and 2306
2. Securing credit for Political Science 2305 by presenting a satisfactory score on the CLEP test in American Government and successfully completing Political Science 2306

**Political Science Curriculum**

Students interested in a political science curriculum should follow the plan outlined for the Bachelor of Arts degree with a major in Social Sciences—Political Science Option.

**Political Science as a Minor**

A minor in Political Science requires eighteen (18) semester credit hours in Political Science, including six semester credit hours advanced.

**UNDERGRADUATE COURSES IN POLITICAL SCIENCE**

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

1302 The World of Law (3-0). This course is designed for students who are interested in preparing for law study or determining whether they are interested in legal careers in professional studies or in legal phases of political systems. No prerequisites. Credit given toward major and minor programs in Political Science.

2303 The Nature and Functions of Law (3-0). This is a casebook study to introduce the undergraduate to some of the major fields of law and basic concepts underlying them. It provides early exposure to the thought
processes demanded by the case method of study, and it deals with what law does toward the operation of our society.

2305 Federal Government (3-0). A required course in United States Government. (GOVT 2305)

2306 State Government (3-0). A required course in Texas Government. (GOVT 2306)

2307 Women and the Law (3-0). The legal status of women at national, state, and local levels, with particular emphasis on recent legislation and court cases.

2308 Readings and Research. Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

3300 The Study of Politics (3-0). An introduction to the major concepts that underlie politics. Topics include democracy, political ideologies, and regimes, structures of governments.

3301 Political Parties (3-0). The development of the party system in the United States, with an emphasis on elections, campaigns, political behavior, public opinion, and the future of the major parties.


3303 Public Policy (3-0). An introduction to public policy making in the United States. Includes stages of the policy making process and theoretical basis of public policy as well as special focus on selected policies. May be repeated for credit when policy focus varies.

3305 Public Administration (3-0). The development and role of administration in the governmental process; principles and problems of administrative organization and coordination, financial responsibility and personnel management, problems of administrative control and accountability.

3306 International Relations (3-0). The theory and practice of international relations with particular attention to the forces and processes contributing to conflict and cooperation among nations.

3307 Contemporary American Foreign Policy (3-0). This course involves the study of policies and problems in the foreign relations of the United States since World War II. Included are studies in the politics, formulation, conduct, and consequences of American foreign policy.

3308 The Presidency (3-0). This course involves studies in the nature and growth of executive power, the analysis of the many-faceted role of the President, and attention to the types of performances of different men in the office. Also studied are the problems of staffing and advising activities, the decision-making process in foreign policy, domestic issues and budgeting, and the future of the Presidency.


3312 State and Local Government (3-0). A study of the organization, functions and powers of state and county government in the United States, with particular reference to patterns of state and local government in Texas. Comparative focus on the state level. Emphasis may be on "politics" or "administration" or both. May include topics such as home rule, problems in International Relations, community power structures, change and reform efforts, politics of education and School districts, local government elites.

3314 Ethnic and Racial Politics (3-0). A study of the relationship between selected ethnic and racial populations and governmental processes and policies. Attention will be given to the role of ethnic and racial populations in the public policy development process and the impact of public policy on these populations. May be repeated for credit when ethnic and racial population vary.

3315 Women and Politics (3-0). Women's roles in politics at national, state, and local levels as they reflect the economic, legal social status of women; also, an overview of related political issues, important concepts, events, and movements.

4302 American Political Thought (3-0). The development of American democracy, including "liberal" and "conservative" contributions to contemporary American political thought.

4303 Comparative Politics and Government (3-0). Study of the politics and governments of nations other than the United States. Course may be repeated for credit when topic varies.

4308 Readings and Research. Selected readings or research projects to be offered as individual study to meet student needs. May be repeated once for credit with departmental approval.

4309 Classical Political Thought (3-0). The purpose, functions, and structure of political theory, with intensive study of Plato and Aristotle.

4310 Modern Political Thought (3-0). Intensive study of post Reformation political thought: Hobbes, Locke, Rousseau, Marx or selected contemporary political ideologies—democracy, communism, fascism, socialism, liberalism, conservatism.

4311 Special Topics (3-0). Special courses on topics not included in the regular curriculum. May be repeated for credit with departmental approval.

4312 Field Experience in Political Science (3-0). In this course, the student is placed in a supervised setting within a government office or an agency with a governmental mission. Approval of department chair is required. May be repeated for credit with departmental approval.

GRADUATE PROGRAM IN PUBLIC ADMINISTRATION

The Master of Arts degree in Public Administration is designed to serve the needs of students who are preparing for political or administrative careers in public or governmental service, or continued graduate studies. Students can also choose a Public Public-Administration General Political Science option, which is designed to meet the needs of individuals currently employed in, or desiring careers in, political science education.

The Criminal Justice and Political Science faculties also offer the student a
dual graduate degree in Public Administration and Criminal Justice. Upon completion of a fifty-four hour curriculum, the student will be awarded both a M.A. degree in Public Administration and a M.S. degree in Criminal Justice.

Except for the thesis option, course work in Political Science must be supported by a minimum of nine to twelve semester credit hours of graduate course work in a related discipline.

Requirements for a degree may be satisfied as follows:

1. Complete a minimum of 36 semester credit hours of graduate credit coursework including PS 5307, OR
2. Complete a minimum of 24 semester credit hours of graduate credit coursework including PS 5307 plus 6 semester credit hours of PS 6301 -6302, Thesis, AND
3. Successful completion of the comprehensive examination required of all graduates.

Courses taken at the 3000- and 4000-level for graduate credit, arranged courses, individual instruction courses, and transfer courses may not total more than 12 semester credit hours.

Admission

While presentation of an undergraduate major in political science is not a requirement, background familiarity with the discipline and/or the general field of United States Government must be evidenced in one of two ways:

1. Credit on the undergraduate level for at least 12 semester credit hours of political science, OR
2. A score of at least 60 percent on an American Government examination administered by the department. Text materials and sample questions are available upon request from the department chairman. Students pursuing a second master's degree must present the same background for study in political science. Any graduate hours already earned in political science (perhaps a minor or electives in the first master's degree) are counted toward the twelve hours background. This test must be successfully completed during the first semester following the student's enrollment.

Students pursuing a second master's degree may have up to twelve semester credit hours of graduate work from the completed degree program credited to the Master of Arts degree in political science. This will occur only after full admission to the political science program has been granted by the Registrar and the chairman of the department.

For information on graduate assistantships or other matters, contact:

Dr. Jay Downing
Department of Behavioral and Social Sciences
Sul Ross State University
Alpine, Texas 79832
(432) 837-8157
Master of Arts with a Major in Public Administration

A. Required Political Science: 15 semester credit hours as follows:
   5303 Public Administration Survey
   5307 Scope and Methods in Social Science
   5310 Public Budgeting and Finance
   5311 Intergovernmental Relations
   5313 Public Policy Analysis

   Minimum 6 semester credit hours from the following Political Science:
   5308 Case Studies in Public Administration
   5312 Agency Politics
   5314 Public Management
   5315 Local Government Administration
   5316 Special Topics in Public Administration

B. Nine to twelve semester credit hours of course work in a related discipline as advised by major advisor.
C. Three to six semester credit hours of additional Political Science course work to bring the total to 36 semester credit hours.

Master of Arts with a Major in Public Administration—General Political Science Option

A. Required Political Science: 15 semester credit hours as follows:
   5303 Public Administration Survey
   5307 Scope and Methods in Social Science
   5310 Public Budgeting and Finance
   5311 Intergovernmental Relations
   5313 Public Policy Analysis

B. Nine semester credit hours of course work in a related discipline as advised by major advisor.
C. Twelve semester credit hours of additional Political Science course work to bring the total to 36 semester credit hours.

Dual Masters in Public Administration and Criminal Justice
Master of Arts with a Major in Public Administration and Master of Science in Criminal Justice

A. Required Political Science and Criminal Justice:
   PS 5303 Public Administration Survey
   PS 5310 Public Budgeting and Finance
   PS 5311 Intergovernmental Relations
   PS 5313 Public Policy Analysis
   CJ 5301 Overview and Administration of Criminal Justice
   CJ 5303 Program and Policy in Criminal Justice
   CJ 5304 Seminar on Liability and Immunity in Criminal Justice
   CJ/PS 5307 Scope and Methods
   CJ 5315 Seminar in Courts and Judiciary
   CJ 5318 Seminar in Criminal Justice Theory
B. Three semester credit hours from:
   - PS 5308 Case Studies in Public Administration
   - PS 5312 Agency Politics
   - PS 5314 Public Management
   - PS 5315 Local Government Administration
   - PS 5316 Special Topics in Public Administration

C. Eighteen additional semester credit hours from Political Science (Public Administration), Criminal Justice, or related discipline as advised by major advisor. No more than nine semester credit hours may be from a related discipline.

**GRADUATE COURSES IN POLITICAL SCIENCE**

5301 Seminar in Comparative Government (3-0). An examination of various approaches to the study of comparative government with individual research problems designed to explore specific topics. May be repeated when topic varies.

5302 Seminar in International Relations (3-0). An examination of key concepts and approaches to the study of international relations in connection with a study of recurrent issues and topics through individual research problems. May be repeated when topic varies.

5303 Public Administration Survey (3-0). The conduct of public business by organized agencies at national, state and local levels. (Public Administration)

5304 Seminar in Political Theory (3-0). An introduction, on the graduate level, to the problems and techniques of analytic political philosophy or other topics in theory.

5305 Readings and Research in Government (3-0). A readings and research course for graduate students in political science designated to meet needs not provided for in other available courses. May be repeated for credit with the approval of the department.

5307 Scope and Methods in Social Science (3-0). An introduction to the subject matter of the social sciences and the major contemporary approaches to it. This course is cross referenced with Criminal Justice 5307.

5308 Case Studies in Public Administration (3-0). Case studies and readings in administration, organization, processes, and goals; the major and characteristic problems of public administration approached through analysis of actual incidents in various executive agencies and theoretical explanations of administrative behavior. Applicable to administration in education settings. (Public Administration)

5309 Internship in Public Administration. Students who enroll in this course are involved in work experience in public or non-profit agencies. Permission of the department chairman required. Academic and work experience evaluations. Maximum of six semester credit hours allowed toward degree requirements. (Public Administration)

5310 Public Budgeting and Finance (3-0). Focuses on the development and execution of various budgeting systems with special attention given to the political content of the budgetary process in the public sector. (Public Administration)
5311 Intergovernmental Relations (3-0). A study of governmental relations among public administrators at various levels—national, state, regional, local—focusing on interactions among these public officials. (Public Administration)

5312 Agency Politics (3-0). A seminar which deals with the several types of non-electoral politics in which public agencies are regularly involved: intra-organizational conflicts, accommodations, negotiations and competitions; and inter-organizational with other agencies, clientele-constituency groups, and legislative and executive entities. (Public Administration)

5313 Public Policy Analysis (3-0). Focuses on techniques used in policy development, adoption, and evaluation in the public sector. Topics include policy reviews, needs assessment, the establishment of goals and objectives, and the analysis of benefits, costs, and risks. (Public Administration)

5314 Public Management (3-0). Public agency administration, including leadership, planning, delegation, supervision, motivation, and performance. (Public Administration)

5315 Local Government Administration (3-0). Administration of local government with particular reference to small cities in Texas. May also include counties, metro-systems, School districts, and other special purpose units. (Public Administration)

5316 Special Topics in Public Administration (3-0). Special courses in Public Administration not included in the regular curriculum. May be repeated for credit with departmental approval. (Public Administration)

5317 Seminar in U.S. Government (3-0). Course focuses on selected topics in U.S. Government. May be repeated when topic varies.

6301 Thesis (0-6). Satisfactory completion of this course will result in an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study. The student will enroll each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made.

6302 Thesis (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the Dean of the School, and filed in the Office of the Provost and Vice President for Academic and Student Affairs.

PRELAW PROGRAM

The Pre-Law Advisor is located in the Department of Behavioral and Social Sciences. Law Schools do not prescribe a specific pre-law curriculum; instead they recommend broad-based, liberal arts preparation. Catalogs from most American Bar Association accredited law Schools are available in the Behavioral Sciences office. More than fifty Sul Ross graduates are actively practicing law at the present time. Political Science 1302, The World
of Law, is specifically for Pre-Law students and is offered in even-numbered years. For pre-law advising, contact Professor David Watson in the Behavioral and Social Sciences Department.

**PSYCHOLOGY**

The psychology major is designed to meet the needs of individuals desiring a Liberal Arts major, a career in a human services profession, or graduate study in psychology or social work.

**Bachelor of Arts**  
(Psychology Major- 120 hours)

| Hours |  
|---|---|
| Psychology 1302, 2307, 3308 | 9 |
| 3 SCH from Group 1 - 3309, 4306 | 3 |
| 3 SCH from Group 2 - 3302, 3304, 4308 | 3 |
| 3 SCH from Group 3-3313, 3314, 4315 | 3 |
| 12 SCH, at least 9 advanced; advanced hours may be any advanced hours in Psychology, including Group courses remaining after completing the above requirements | 12 |
| Electives | 12-14 |
| English 1301, 1302, 2301 or other literature, and 3 SCH sophomore or advanced | 12 |
| Communication 1303 or Theatre 2304 | 3 |
| Fine Arts: select 3 SCH from Fine Arts 1301; Art 1301; Music 1312, 1313; or Theatre 1302 plus an additional 3 SCH from art, journalism, music, theatre, or IT 2304 | 6 |
| United States History | 6 |
| Mathematics: select from 1310, 1315, 1316, or 1342 | 3 |
| Multicultural Social Science: select from History 2301, 2302; Mexican American Studies 2301; Political Science 2307; Women's Studies 2301 | 3 |
| Physical Education 1150 and one activity course | 2 |
| Political Science 2305 and 2306 | 6 |
| Laboratory Science: Astronomy 1401, 1402; Biology 1401, 1402; Chemistry 1401, 1402; Geology 1401, 1402, 2404; Physics 1401, 1402, 2401, 2402 | 8 |
| Minor | 18 |

**TOTAL 120**

**Bachelor of Arts**  
(Psychology Major) The following is a suggested sequence of courses for students seeking the Bachelor of Arts degree with a major in Psychology. One of the history or elective courses may be taken to meet the multicultural social science requirement.

| Hours |  
|---|---|
| Freshman Year |  
| Psychology 1302 and any one from 2304, 2309, or 2310 | 6 |
| United States History | 6 |
| English 1301, 1302 | 6 |
| Math Requirement | 3 |
Oral Communication Requirement ...................................................... 3
Fine Arts Requirement .................................................................. 6
Physical Education Requirement .............................................. 2

**TOTAL 32**

**Sophomore Year**

Psychology 2307 (only after completing math requirement),
and any two additional Psychology courses, one at the
3000 level or higher ...................................................................... 9
Political Science 2305, 2306 .......................................................... 6
English Literature course and one English 2000 or higher .............. 6
Science Requirement .................................................................... 4
Foreign Language Requirement .................................................... 8
Computer Requirement ................................................................ 3

**TOTAL 36**

**Junior Year**

Psychology. Complete Psychology 3308 and two additional Psychology
courses numbered 3000 or higher, preferably completing your group
requirements (Groups 1, 2, and 3) .................................................. 9
Multicultural Social Science Core Requirement ................................ 3
Science Requirement .................................................................... 4
Minor .............................................................................................. 9
Electives ......................................................................................... 3

**TOTAL 28**

**Senior Year**

Psychology, 3000 level or higher .................................................... 6
Minor (6 SCH 3000 level or higher) .............................................. 9
Elective (up to 15 SCH of course work at 3000 level or higher may be
needed to meet the 39 SCH advanced requirement) ...................... 9

**TOTAL 24**

**GRAND TOTAL 120**

**Psychology as a Minor**

A minor in Psychology requires eighteen (18) semester credit hours in
Psychology including six semester credit hours advanced.

**UNDERGRADUATE COURSES IN PSYCHOLOGY**

(Subject titles and course numbers in parentheses at the end of the course
description represent the course equivalent in the Texas Common Course
Numbering system.)

1101 *Scientific Foundations of Learning* (1-0). This course investigates the
basic biological, psychological, and sociological determinates of adult
learning. The relationships between individual behaviors and social
processes that affect adult learning in the University community are studied
utilizing theoretical frameworks and applied science.
Prerequisite: Freshman classification.

1302 *Introduction to Psychology* (3-0). Introduction to psychology as a
scientific discipline. Required of all students who will major or minor in
psychology. Recommended for students in other areas of behavioral
science. (PSYC 2301)
2304 Introduction to Social Psychology (3-0). Introduction to social psychology; topics include affiliation, perceptions of others, liking for others, aggression, group structure and leadership, group dynamics, conformity, and attitude formation and change. (PSYC 2319) Prerequisite: Psychology 1302 or consent of instructor.

2307 Introductory Statistics for the Behavioral Sciences (3-0). Descriptive statistics and inferential statistics through two-way analysis of variance. Includes both parametric and non-parametric statistics. Required of psychology majors. (PSYC 2317)

2309 Human Sexuality (3-0). Fundamentals of human sexuality including biological, behavioral, and cultural aspects of sexuality. (PSYC 2306)

2310 Developmental Psychology (3-0). The study of the developing human from birth to death, including physical, cognitive, emotional, and moral development. (PSYC 2314) Prerequisite: Psychology 1302 or consent of instructor.

2311 Readings and Research. Selected readings and research projects to be offered as individual study to meet student's needs. May be repeated for credit.

3302 Theories of Personality Psychology (3-0). Current scientific considerations in personality are pursued in the domains of the biological, consciousness, disposition, cognitive/experiential, socio-cultural and adjustment psychology. Several historic positions with considerable contemporary influence are considered. Self-study and understanding are supported. Students may be asked to participate in a series of videotaped interviews to experience aspects of personality psychology in practice. Prerequisite: Psychology 1302 or consent of instructor.

3303 Psychology of Adjustment in Modern Life (3-0). An introduction to the principles of psychology that is most relevant to understanding one's own behavior, that of significant others and the interaction in modern society that is paradoxically technically advanced and yet more stress producing than in the past. Self-study activities are an important part of the course. Students may be asked to participate in a series of videotaped interviews to further explore life areas such as stressors/hassles, coping skills, etc.

3304 Abnormal Behavior (3-0). An investigation of behavioral disorders and the biological and social factors which may affect them. Prerequisite: Psychology 1302 or consent of instructor.

3308 Experimental Psychology (3-0). Study of experimental methods and research findings in areas of psychophysics, sensory processes, learning and motivation. Development of experimental design. Prerequisite: Psychology 1302 and Psychology 2307 or consent of instructor.

3309 The Psychology of Learning (3-0). A review of animal and human research involving explanations of learning in everyday life which includes how the consequences of behavior affect future actions. Prerequisite: Psychology 1302 or consent of instructor.

3313 Social Attitudes (3-0). An introduction to the study of political behavioral and attitude research focusing on problems of measurement, empirical findings, theories of acquisition and change, media effects, as well as political socialization and political personality. Prerequisites: Psychology 1302 or consent of instructor.
3314 Multicultural Psychology (3-0). The concept of culture is investigated as a subject in and of itself and also as a variable that may explain differences in various psychological contexts: conceptions of personhood, therapeutic intervention, family dynamics, expectations for the future. Prerequisite: Psychology 1302 or consent of instructor.

4009 Reading and Research (0-0). Selected readings of research projects to be offered as individual study to meet student needs. May be repeated for credit when the topic varies with the approval of the major advisor. Variable for 1 or 2 semester credit hours.

4306 Biopsychology (3-0). A systematic review of the theories and research dealing with physiological correlates of learning, motivation, emotion and perception. Prerequisite: Psychology 1302 or consent of the instructor.

4308 Clinical Psychological Methods (3-0). Theory and methods of clinical psychology; including theory and application of the counseling interview, therapeutic psychology, therapeutic techniques, and the therapeutic process. Prerequisite: Psychology 1302 or consent of the instructor.

4309 Readings and Research (3-0). Selected readings or research projects to be offered as individual study to meet student needs. May be repeated for credit when the topic varies with the approval of the major advisor.

4310 Special Topics (3-0). Special course in Psychology on topics not included in the regular curriculum, e.g. advanced statistics, comparative psychology, primate behavior, adult developmental psychology, sensation and perception. Prerequisite: Psychology 1302 or consent of the instructor.

4311 Community Experience in Psychology (0-0). This course allows students to gain practical experience with human services agencies. Students are assigned to work with an area agency. May be taken only once to meet degree plan requirements. Prerequisite: Psychology major. Senior standing.

4315 History of Psychology (3-0). Students are introduced to the development of Psychology as a scientific discipline, beginning with a survey of ancient philosophical thought, and leading to the eventual combination of ideas and methods from physiology and philosophy. Current trends in contemporary psychological investigation are discussed in terms of persistent questions regarding, for instance, the mind/body question, nature vs. nurture, the correspondence between realities and understanding the nature of knowledge, and the place of humans in the universe.

GRADUATE COURSES IN PSYCHOLOGY

Psychology is available to support such majors as Public Administration, Education, Business Administration, or History.

5304 Readings and Research in Psychology (3-0). A reading and research course for graduate students. May be repeated for credit with the approval of the department.

5305 Special Topics in Psychology (3-0). Selected topics in the area of Psychology. May be repeated when topic varies.
A minor in Sociology requires eighteen (18) semester credit hours in Sociology, including six semester credit hours advanced.

**UNDERGRADUATE COURSES IN SOCIOLOGY**

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

1313 *Juvenile Justice System (3-0).* Study of the juvenile justice system and juvenile crime and delinquency. Theories of delinquency. This course is cross referenced with Criminal Justice 1313.

2303 *Introduction to Sociology (3-0).* A survey of the field of sociology. Introduction to basic terminology and fundamentals of sociology; and the application of sociological knowledge to problems in human societies. (SOCI 1301)

2305 *The Family (3-0).* Sociological analyses of the family as a social institution, its social-psychological processes, development, and cross-cultural variations. (SOCI 2301)

2306 *Readings and Research.* Selected readings and research projects to be offered as individual study to meet student’s needs. May be repeated for credit.

3301 *Introduction to Social Research (3-0).* The nature of social research including research design, the preparation of data collection instruments, data analysis techniques, and research report writing. Emphasis will be placed on development of computer competencies in behavioral and social science research.

3302 *Victimology, Victims’ Services, and Victims’ Rights (3-0).* The history of victims’ rights, services, and the victims' rights movement; the provision of services to victims, relevant legal developments; victim precipitation and victim self-help; prevention of victimization. This course is cross referenced with Criminal Justice 3302.

3308 *Minority Groups (3-0).* The study of the processes and effects of social discrimination in the creation and maintenance of minority groups.

3308 *The American Society (3-0).* A systematic study of current social institutions of the United States in terms of both structure and function as influenced by various aspects of our culture, including social changes. At times, a thematic approach may be employed with a detailed focus on one institution, such as education or religion.

3311 *Rural Sociology (3-0).* A survey of rural problems and their relation to the increasing urbanization of America, the social organization of rural life and power structures in small communities.

3314 *Sociology of Religion (3-0).* Topics covered include the reasons religions develop, religious organizations as institutions, the interplay between religion and societal values, and the role of religion in societal change.
3315 Introduction to Professional Social Work (3-0). This introductory course will enable students to become familiar with the profession of Social Work and its avenues of practice. Students will examine how social services enhance the well-being of people and promote social and economic justice. The history of the Social Work profession and exposure to a variety of current professional social workers working in diverse agencies and milieus will be part of the overall course content.

3316 Domestic Violence (3-0). This course is designed to give the student a basic knowledge of the issues surrounding victims and perpetrators of domestic violence. Topics covered will include victim and perpetrator characteristics, explanations for the violence, and explanations for the victim's behavior. Criminal justice responses to domestic violence situations both currently and historically will also be covered. This course is cross-referenced with Criminal Justice 3316.

4304 Criminology (3-0). A study of the factors that contribute to crime, criminological theories, criminal types, research methods, types of crimes, and crime trends. This course is cross-referenced with Criminal Justice 4304.

4305 Social Deviance (3-0). The study of nonconformity to social norms. The causes of deviance and the role the deviant plays in society.

4307 Social Welfare Programs, Policies and Issues (3-0). Social Work education includes an understanding of the forms and mechanisms of oppression and discrimination and the strategies of change that advance social and economic justice. This course will enable students to analyze the impact of social policies on client systems, workers and agencies.

4309 Readings and Research. Selected readings or research projects to be offered as individual study to meet student needs. May be repeated once for credit with departmental approval.

4310 Special Topics in Sociology (3-0). Selected topics in Sociology. May be repeated for credit when the topic varies.

GRADUATE COURSES IN SOCIOLOGY

Sociology is available to support such majors as Political Science, Education, Business Administration, or History.

5303 Multicultural Society (3-0). Analysis of the concepts of "culture" and "social system" as treated in sociological literature combined with the study of social behaviors of distinct culture groups in the United States.

5306 Readings and Research in Sociology (3-0). A reading and research course for graduate students. May be repeated for credit with the approval of the department.

5307 Special Topics in Sociology (3-0). Selected topics in the area of Sociology. May be repeated when topic varies.
SOCIAL SCIENCES

Students who desire a broad field major in the social sciences should follow one of the plans for a major in social science listed below. Inquiries should be directed to the Chairman of the Department of Behavioral and Social Sciences.

Bachelor of Arts
(Social Sciences Major- 120 hours)

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Sciences Major:</td>
</tr>
<tr>
<td>Geography</td>
</tr>
<tr>
<td>History 2301, 2302</td>
</tr>
<tr>
<td>History advanced</td>
</tr>
<tr>
<td>Economics 2300, 2305</td>
</tr>
<tr>
<td>Political Science advanced</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>English 1301, 1302, 2301 or other literature, and</td>
</tr>
<tr>
<td>6 SCH sophomore or advanced</td>
</tr>
<tr>
<td>Communication 1303 or Theatre 2304</td>
</tr>
<tr>
<td>Computer Science: select from OFS 1384, CS 1301, or equivalent</td>
</tr>
<tr>
<td>Fine Arts: select from Fine Arts 1301; Art 1301; Music 1312, 1313; or</td>
</tr>
<tr>
<td>Theatre 1302 plus an additional 3 SCH from art, journalism,</td>
</tr>
<tr>
<td>Music, theatre, or IT 2304</td>
</tr>
<tr>
<td>Foreign Language</td>
</tr>
<tr>
<td>History 1301, 1302</td>
</tr>
<tr>
<td>Political Science 2305, 2306</td>
</tr>
<tr>
<td>Mathematics: select from 1310, 1315, 1316, or 1342</td>
</tr>
<tr>
<td>Multicultural Social Science: select from History 2301, 2302; Mexican</td>
</tr>
<tr>
<td>American Studies 2301; Political Science 2307; Women's</td>
</tr>
<tr>
<td>Studies 2301</td>
</tr>
<tr>
<td>Physical Education 1150 and one activity course</td>
</tr>
<tr>
<td>Laboratory Science: select from Astronomy 1401, 1402; Biology 1401, 1402;</td>
</tr>
<tr>
<td>Chemistry 1401, 1402; Geology 1401, 1402, 2404; or Physics 1401, 1402,</td>
</tr>
<tr>
<td>2401, 2402</td>
</tr>
</tbody>
</table>

TOTAL 120

Teacher Certification through the Post Baccalaureate Initial Certification Program

Students who wish to teach the Social Sciences (Economics, Geography, Government, and History) should follow this degree plan and make plans with their Major Advisor and the Education Department to take the Education courses required for certification. Some of these courses may be taken as Electives, or you may seek certification through the Education Department's Post Baccalaureate Initial Certification Program.
Bachelor of Arts – Social Sciences Major

The following is a suggested sequence of courses for students seeking the Bachelor of Arts degree with a major in Social Science. One of the political science, history, or elective courses may be taken to meet the multicultural social science requirement.

**Hours**

**Freshman Year**
- Computer Science Requirement .......................................................... 3
- United States History Requirement ...................................................... 6
- English 1301, 1302 ............................................................................. 6
- Oral Communication Requirement ....................................................... 3
- Fine Arts Requirement ........................................................................ 3
- Science Requirement ........................................................................... 8
- Physical Education Requirement ......................................................... 2

**TOTAL 31**

**Sophomore Year**
- Political Science 2305, 2306 ................................................................. 6
- Geography ............................................................................................ 3
- Multicultural Requirement ................................................................. 3
- History 2301, 2302 ............................................................................. 6
- English Literature 2000 or higher ...................................................... 3
- Foreign Language Requirement ......................................................... 6-8
- Mathematics Requirement ................................................................. 3

**TOTAL 30-32**

**Junior Year**
- English Advanced ............................................................................. 3
- Political Science .................................................................................. 6
- Economics 2300, 2305 ...................................................................... 6
- Geography ............................................................................................ 3
- Fine Arts ............................................................................................... 3
- Electives ............................................................................................... 3

**TOTAL 27**

**Senior Year**
- History ................................................................................................. 12
- Political Science .................................................................................. 9
- Electives ............................................................................................... 9-11

**TOTAL 30-32**

**Grand Total 120**

**Bachelor of Arts in Social Sciences--Political Science Option**

Students interested in a political science curriculum should follow the plan outlined for the Bachelor of Arts degree with a major in Social Sciences—Political Science Option. This plan allows for specialization in political science within the general Social Sciences degree.

- Political Science 2305, 2306 ................................................................. 6
- Political Science 24 SCH at least 18 SCH advanced.......................... 24
- Psychology 2307 ................................................................................ 3
- Geography ............................................................................................ 3
- History 2301, 2302 ............................................................................ 6
- History advanced ................................................................................. 12
Economics 2300, 2305 ................................................................. 6
Electives .................................................................................. 6
English 1301, 1302, 2301 or other literature, and
   6 SCH sophomore or advanced ........................................ 12
Communication 1303 or Theatre 2304 ................................. 3
Computer Science: select from OFS 1384, CS 1301, or equivalent ........ 3
Fine Arts: select from Fine Arts 1301; Art 1301; Music 1312, 1313; or
Theatre 1302 plus an additional 3 SCH from art, journalism,
   Music, theatre, or IT 2304 ...................................................... 6
Foreign Language .................................................................... 6-8
History 1301, 1302 ................................................................. 6
Mathematics: select from 1310, 1315, 1316, or 1342 ................. 3
Multicultural Social Science: select from History 2301, 2302; Mexican
American Studies 2301; Political Science 2307; Women's
   Studies 2301 ........................................................................ 3
Physical Education 1150 and one activity course ...................... 2
Laboratory Science: select from Astronomy 1401, 1402; Biology 1401,
   1402; Chemistry 1401, 1402; Geology 1401, 1402, 2404; or Physics
   1401, 1402, 2401, 2402 ...................................................... 8

TOTAL 120
DEPARTMENT OF BIOLOGICAL AND EARTH AND PHYSICAL SCIENCES

Department of Biological and Earth Physical Sciences
College of Arts and Sciences
Office: Warnock Science Building, 216
Phone: (432) 837-8112
E-mail: biology@sulross.edu

Associate Professor and Chair: Christopher M. Ritzi, Ph.D.

Professor: James C. Zech, Ph.D.

Associate Professor: Martin K. Terry, Ph.D., D.V.M

Lecturer: Jackie Denson, M.S.

Program Description
The major orientation of the Department of Biology is toward an organismal approach to the life sciences, emphasizing integrated ecological and co-evolutionary studies of plants and animals through field work in the Chihuahuan Desert region. The curriculum is designed to provide broad training in most aspects of modern biology, and will also prepare students for almost any advanced specialty discipline including pre-medical and allied health areas. Additionally, the composite science education track is designed to provide future teachers and educators abroad background in science, with a concentration in the biological sciences. The department also offers courses emphasizing non-game and small game organisms which meet the requirements for certification as a wildlife biologist as set forth by the Wildlife Society and lead to the professional B.S. degree in biology. The department maintains one of the largest herbaria in Texas, highly regarded vertebrate animal and insect collections, modern greenhouses, and laboratories for microbiology and molecular biology.

The countryside around Alpine is characterized by rugged mountains interspersed with high plateau grasslands and lowland deserts. The area is generally referred to as the Big Bend Country and represents the northern part of the great Chihuahuan Desert. The tremendous diversity of landscape and habitat makes the entire area a huge natural outdoor laboratory unmatched elsewhere for the study of biology.

Why Major in Biology?
Why should you want to major in Biology? Well, few of us could claim to actually be uninterested in Biology. From the beginning of our learning years, we are fascinated by other living things in the world. We want to and need to know about living things for the simple reason that our scientific understanding of living things is what helps us improve agriculture, medicine, and biotechnology. Biology gives us the knowledge and insight about how we function, our origins, and where we are headed. Life's history is our history and one of the best guides we have for facing the future. So, given that Biology is important and interesting, what careers are possible after training in Biology? The best news is that, with training in science, a degree in Biology offers virtually unlimited opportunities. There are hundreds of
diverse careers possible. Some of the major categories are health care, education, research, agriculture, aquaculture, conservation and resource management, and industry and biotechnology. The following list shows possible careers and jobs that a Biology major might consider. It is important that you start thinking about your opportunities as early as possible and take an active role in planning and preparing for your future career.

**Career Opportunities in Biology**

**Health/Medical**
- Anesthesiologist
- Athletic Trainers
- Audiology
- Bacteriologist
- Biomediation Technician
- Biomedical Engineering
- Chiropractic
- City Recycling Manager
- Dentistry
- Dermatology
- Epidemiology
- Food and Drug Inspector
- Gerontology, Geriatrics
- Hunger Policy Analyst
- Industrial Hygiene
- Kinesiology
- Medical Illustration
- Medical Technologist
- Nursing
- Occupational Safety and Health
- Occupational Therapy
- Osteopathic Medicine
- Parasitologist
- Pathology
- Pharmaceutical Sales
- Pharmacology
- Physical Therapy
- Physician
- Physician’s Assistant
- Podiatry
- Public Health
- Public Health Officer
- Water Quality Inspector
- Sales: Health Care
- Speech Pathology
- Sports Medicine
- Toxicologist
- Veterinary Medicine
- Vision Science

**Business/Industry**
- Aquarist
- Biochemist
- Bioengineer
- Bioethicist
- Botanical or Zoological Gardens Curator
- Botanist
- Conservationist
- Ecologist
- Editor
- Entomologist
- Environmental Protection Specialist
- Fundraiser, Environmental Organization
- Herpetologist
- Horticulturalist
- Ichthyologist
- Industrial Hygienist
- Journalist: Science Magazine
- Journalist: Wildlife Photographer
- Landscape Architect
- Landscape Architect
- Landscape Ecology
- Limnologist
- Mammalogist
- Molecular Biologist
- Ornithologist
- Park Naturalist
- Park Ranger
- Pest Control Consultant
- Teacher/Professor
- Technical Writer
- Zoologist
Bachelor of Science  
(Biology Major: Professional Degree 120 hours)

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 1401, 1402 ........................................... 8</td>
</tr>
<tr>
<td>Select 8 SCH from any Biology 2000 level courses except Biology 2403 ........................................... 8</td>
</tr>
<tr>
<td>Biology 3306, 4101, 4301 plus 19 SCH advanced .................. 26</td>
</tr>
<tr>
<td>Electives .................................................. 8</td>
</tr>
<tr>
<td>English 1301, 1302, 2301 or other literature, and English 2304 .... 12</td>
</tr>
<tr>
<td>Communication 1303 or Theatre 2304 ................................ 3</td>
</tr>
<tr>
<td>Fine Arts: select from Fine Arts 1301, Art 1301; Music 1312, 1313; or Theatre 1302 ........................................... 3</td>
</tr>
<tr>
<td>United States or Texas History ................................ 6</td>
</tr>
<tr>
<td>Mathematics: 1342, and 3 SCH from 1315, 1316, or higher .......................... 6</td>
</tr>
<tr>
<td>Multicultural Social Science: select from History 2301, 2302; Mexican American Studies 2301; Political Science 2307; or Women's Studies 2301, or other approved course .................. 3</td>
</tr>
<tr>
<td>Physical Education 1150 and one activity course .................. 2</td>
</tr>
<tr>
<td>Political Science 2305, 2306 ........................................... 6</td>
</tr>
<tr>
<td>Laboratory Science: Chemistry 1401, 1402 ........................ 8</td>
</tr>
<tr>
<td>Social Science: select from Anthropology 1301; Economics 2300, 2305; Geography 1302, 2302; Philosophy 1301; Psychology 1302; Sociology 2303 ........................................... 3</td>
</tr>
<tr>
<td>Minor ..................................................................... 18</td>
</tr>
</tbody>
</table>

TOTAL 120

Bachelor of Science  
(Biology Major: Professional Degree)

The following shows a suggested sequence of classes for the Biology major professional degree.

<table>
<thead>
<tr>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year</td>
</tr>
<tr>
<td>Biology 1401, 1402 ........................................... 8</td>
</tr>
<tr>
<td>English 1301, 1302, 2304 ........................................... 9</td>
</tr>
<tr>
<td>Math 1315, 1316 or higher ........................................... 3</td>
</tr>
<tr>
<td>Chemistry 1401, 1402 ........................................... 8</td>
</tr>
<tr>
<td>United States History 1301, 1302 ................................ 6</td>
</tr>
<tr>
<td>Physical Education 1150 and one activity course .................. 2</td>
</tr>
</tbody>
</table>

TOTAL 36

Sophomore Year

Choose 8 hours from any 2000 level Biology course except 2403 .......... 8

English 2301 or other literature ........................................... 3

Multicultural Social Science ........................................... 3

Social Science ........................................... 3

Political Science 2305, 2306 ........................................... 6

Fine Arts ........................................... 3

Communication 1303 or equivalent ........................................... 3

TOTAL 29

Junior Year

Biology 3306 ................................................................ 3

Choose 8 hours from any 3000 or 4000 level Biology course .......... 8
No course with a grade less the "C" can be used to fulfill biology course requirements.

Bachelor of Science (Biology Major with emphasis in Wildlife Biology)
The Biology Professional Degree Plan can be tailored to any particular biology career. For example, students wanting to meet the educational requirements for certification as a wildlife biologist by the Wildlife Society can do so by selecting specific courses for the Biology major, choosing a minor in Natural Resource Management, and taking the following recommended classes. Students should consult with an advisor to ensure that certification requirements do not change and to discuss the multitude of options that can be used for certification requirements.

Hours

Freshman Year
Biology 1401, 1402 ................................................................. 8
English 1301, 1302 ................................................................. 6
Math 1315 or 1320 ................................................................. 3
Social Science ................................................................. 3
Chemistry 1401 and Geology 1401 ........................................... 8
United States History ............................................................. 6
Physical Education 1150 and one activity course ..................... 2

TOTAL 36

Sophomore Year
Biology 2405 and 2408 ............................................................. 8
English 2301 or other literature and English 2304 ....................... 6
Multicultural Social Science .................................................... 3
Political Science 2305, 2306 ...................................................... 6
Fine Arts ................................................................. 3
Communication 1303 or equivalent ........................................... 3
Natural Resource Management 2302 ..................................... 3

TOTAL 32

Junior and Senior Years
Biology 3306, 4101, 4301 ............................................................. 7
Choose 8 hours from Biology 4403, 4404, or 4409 ..................... 8
Choose 8 hours from Biology 3405, 4406, or other botany .......... 8
Choose 3 hours from any 3000 or 4000 level Biology ................. 3
Criminal Justice 3304 ............................................................. 3
Geology 3401 ........................................................................ 4
Math 1342 .......................................................................................................................... 3
Natural Resource Management 2404 and 3304 .............................................................. 7
Choose 8 hours from Natural Resource Management 4309, 4405, or 4407 ...................... 8
Electives.................................................................................................................................. 1

TOTAL 52
GRAND TOTAL 120

No course with a grade less the "C" can be used to fulfill biology course requirements.

Bachelor of Science
(Biology Major with Composite Science 8-12 Teacher Certification)

Required Education Courses: ED3300, 3301, 3302, 3303, 4314, 4322, 4317, 4605

Teaching Field:
Biology 1401, 1402, 2406, 3306, 4101, 4301, 4406; 4 hrs from 2401, 2403, or 2407; 4 hours from 3403, 3408 or 3601; 4 hours from 4402, 4403, and 4404, or 4409; 3601, 4403, 4404, or 4409; 4 hours from 3405, 3602, 4405 or 4408; Biology 4406; Geology 1401, 1402; Physics 1401, 1402; plus 10 semester credit hours advanced Biology courses.

Biology as a Minor
Biology 1401, 1402; ......................................................................................................... 8
Upper level 3306, 4301, plus 4 SCH advanced ................................................................. 10

No course with a grade less the "C" can be used to fulfill biology course requirements.

Minor in Wildlife Biology
A minor for Criminal Justice majors only is offered for those C.J. majors seeking employment or certification as game wardens or park rangers. This program is aimed at preparing the individual to be able to identify plants and animals in the field with emphasis placed on species protected by federal or state laws.

Biology as a Minor for Criminal Justice Majors
Biology 1401, 1402; 12 hours from Biology 4402, 4403, 4404 or 4409; other upper level Biology courses may be substituted.

PRE-HEALTH PROFESSIONS AND PRE-NURSING
Sul Ross State University offers courses which satisfy requirements for the first two years of most four-year professional nursing programs outlined by the various Schools of nursing. However, the requirements of the different Schools of nursing vary so widely it is imperative that students follow closely the requirements of the School to which they will seek admission. To that purpose, students should seek counsel from the Pre-Nursing Advisor in the Department of Biology before enrolling. Students interested in other pre-health professions should also consult the Pre-Health Professions Advisor in
the Department of Biology. Some of these programs involve other disciplines and students will also be advised by these departments.

**PRE-MEDICINE AND PRE-DENTISTRY**

Students interested in applying for admission to medical or dental School may major in any undergraduate field they wish. Professional School admission committees do not state a preference about an undergraduate major field, and students may select a degree program suited to their interests. They must work closely with the Pre-Professional Advisor to develop a program which will satisfy the requirements of both their chosen major field and the professional Schools of their interest. Information concerning admission requirements of professional Schools is available in the office of the Pre-Professional Advisor of the Department of Earth and Physical Sciences. Periodic student conferences with the Pre-Professional Advisor are strongly recommended.

**PRE-PHARMACY**

Sul Ross State University offers courses which satisfy requirements for the first two years of most five-year professional pharmacy programs as outlined by the various Schools of pharmacy. However, the requirements of the different Schools of pharmacy vary so widely it is imperative that students follow closely the requirements of the School to which they will seek admission. To that purpose, students should seek counsel from the Pre-Professional Advisor before enrolling.

**Bachelor of Science**

**(Biology Major in association with the DEAP-Dental Early Admission Program)**

This modified degree track is designed for a student to complete their first three years at Sul Ross, and enter UTHSA-SA Dental School for their last year of the MS degree and first year of the DDS degree. Other requirements, including application, admission, and DAT scores, are independent of this degree track.

Required Courses while attending Sul Ross: Eng 1301, 1302, 2304, 2301 or other literature, Comm 1303, Hist 1301, 1302, Math 1342 & 1315, 1316 or higher, Fine Arts requirement, Multicultural requirement, PE 1150 and an activity course, PS 2305, 2306, Social Science requirement, Biol 1401, 1402, 2404, 2405, 3306, 4301, Chem. 1401, 1402, 3407, 3408, Phys 1401, 1402.

**UNDERGRADUATE COURSES IN BIOLOGY**

*(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)*

1301 Medical Terminology (3-0). This course is intended to introduce students to the importance of the medical terminology in order to properly use it in a medical environment. This goal will be addressed through an examination of the terminology of the human body, starting with the general terms and then specializing on the various systems of the body, including the integument, muscular, skeletal, cardiovascular, digestive, endocrine,
lymphatic, respiratory, reproductive, and urinary. Combined with on-line resources, students will acquire an understanding of how medical terms should be used, pronounced, and the meaning behind these terms.

1401 General Botany (3-2). A general survey of the plant kingdom which considers the fundamentals of biological facts, laws, and principles as they apply to plants. Structure and functions of the organs of representative plants will be considered. (BIOL 1411)

1402 General Zoology (3-2). A general survey of the animal kingdom which considers the fundamentals of biological facts, laws, and principles as they apply to animals. The structure and functions of the organs and systems of representative animals will be covered. (BIOL 1413)

2100 Independent Study/Research (0-3). Independent study or research of a topic in biology with supervision by a biology faculty member. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or consent of instructor.

2200 Independent Study/Research (0-6). Independent study or research of a topic in biology with supervision by a biology faculty member. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or consent of instructor.

2300 Independent Study/Research (0-9). Independent study or research of a topic in biology with supervision by a biology faculty member. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or consent of instructor.

2320 Special Topics (3-0). A course offering selected topics in biology. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or consent of instructor.

2401 Plants and People (3-2). A survey of plants and plant products that have major uses in human life. Such uses include food, fiber, medicines, religious sacraments, poisons, stimulants, inebriants, oils, perfumes, dyes, spices, and beverages. Examples from Trans-Pecos Texas will be discussed, including forages, toxic plants and invasive species. Prerequisite: General Botany or equivalent.

2403 Survey of Human Anatomy and Physiology (3-2). Basic structure and function of human systems, including: skeletal, muscular, cardiovascular, respiratory, nervous, digestive, and urinary systems. Laboratory emphasis on anatomy and lecture emphasis on physiology. Recommended for Kinesiology and pre-vocational nursing students. This course will not count toward credit in a Biology major or minor. Prerequisite: General Zoology or permission or instructor.

2404 Human Anatomy and Physiology I (3-2). Study of the structure and function of the integumentary, skeletal, muscular, and nervous systems. Also focuses on basic cellular physiology and how it applies to various systems of the body. This course will involve the dissection of mammalian material. Course is intended for pre-nursing, pre-medical, pre-optometry, pre-veterinary, other pre-health professionals, and biology majors. Prerequisite: General Zoology.

2405 Human Anatomy and Physiology II (3-2). Study of the structure and function of the cardiovascular, respiratory, and digestive, urinary, immune,
endocrine, and reproductive systems. This course will involve the dissection of mammalian material. Course is intended for pre-nursing, pre-medical, pre-optometry, pre-veterinary, other pre-health professionals, and biology majors.
Prerequisite: General Zoology and Human Anatomy and Physiology I or by permission of instructor.

2406 Introduction to Microbiology (3-2). This course is a study of the principles and techniques of bacteriology. The laboratory work is in part comprised of the application of staining and microscopic techniques, preparation of media, pure culture techniques, and the physical and chemical control of microorganisms. Course designed for biology majors, pre-nursing, pre-dental, and pre-vet students. (BIOL 2421)
Prerequisite: General Botany or Zoology or equivalent, and General Chemistry.

2407 Environmental Biology (3-2). An introduction to the biological effect of the human activities on the environment. This course emphasizes water, soil, and air pollution as well as other current ecological concerns. The course serves as one of the introductory courses in environmental science. The laboratory will focus on the EPA Standards Method used in field and laboratory analysis of environmental samples.
Prerequisite: Consent of instructor.

2420 Special Topics with Laboratory (3-2). A course offering selected topics in biology with laboratory. This course may be repeated if topic varies.
Prerequisite: General Botany or General Zoology, or by permission of instructor.


3302 Unseen Life on Earth (3-0). A lecture course examining microbial functions and how microorganisms affect everything from medicine to environmental issues to global politics. Students gain an enhanced appreciation of the field of microbiology by studying the work of scientists and other experts in the field.
Prerequisite: General Botany or General Zoology.

3303 Sciences in Cinema and Television (3-0). A lecture course examining the scientific content or lack thereof in classic and current films. Films with a scientific theme will be viewed and the merits of the scientific content will be discussed. Students will gain an understanding and appreciation of how science is portrayed to the viewing public by the film and television industries and can be used as a persuasive tool for political maneuvering.
Prerequisite: General Botany or General Zoology.

3305 Women in Science (3-0). Explores the roles and contributions that past and present women have made within the sciences, including: chemistry, earth and physical sciences, biology, and natural resource management.

3306 Genetics (3-0). A comprehensive introduction to four main areas of modern genetics: Mendelian genetics, cytogenesis, molecular genetics, and population genetics. The historical and philosophical basis for these areas will be dealt with using plant and animal studies.
Prerequisite: General Botany or General Zoology or equivalent.

3307 Animal Behavior (3-0). The study of feeding, defense, animal orientation, instinctive behavior, learning, communication, social, and sexual behavior with emphasis on evolutionary and ecological relationships. Prerequisite: General Zoology or equivalent.

3403 Parasitology (3-2). A study of the biology, morphology, and ecology of parasitic organisms as they relate to various host-parasite relationships and diseases in animals and man. The diagnosis, pathology, treatment and prevention of parasitism will be discussed. Post mortem examinations and treatment of animals will be performed in labs as available. Prerequisite: General Zoology or equivalent.

3405 Agrostology (3-2). The classification, phylogeny, natural history, and literature of the important range grasses of the Trans-Pecos region of Texas. Collection and field trips. Prerequisite: General Botany or equivalent.

3408 Invertebrate Zoology (3-2). The study of the life history, morphology, taxonomy, phylogeny, and ecology of invertebrate organisms. Prerequisite: General Zoology or equivalent.

3601 General Entomology (4-4). A comprehensive introduction to the field of entomology, including functional anatomy, physiology, behavior, ecology, and control of insects. Laboratory section emphasizes taxonomy. Collection of insects is required. Prerequisites: General Zoology or equivalent.

3602 Plant Taxonomy (4-4). The taxonomic study of vascular plants, emphasizing the flowering plants of Trans-Pecos Texas. Included are traditional aspects of plant classification, phylogeny, herbarium techniques, collections, and field trips. Usually offered only in summer. Prerequisite: General Botany or equivalent.

4101 Biology Senior Review (1-0) Pertinent topics in biology. Required for all majors and in order to be eligible for teaching certification. To be taken during last long semester before graduation. Prerequisite: Completion of, or current enrollment in, all required departmental courses (e.g., Genetics and Cell Biology).

4102 Individual Studies (1-0). Individual study of selected topics in biological literature or field biology.

4202 Individual Studies (2-0). Individual study of selected topics in biological literature or field biology.

4300 Individual Studies (3-0). Independent study of selected topics in Biology.

4301 Cell Biology (3-0). A study of the particulate morphology and basic physiology of the cell and cell organelles, including basic facts, concepts, and problems in modern cellular biology. Prerequisite: General Botany and General Zoology or equivalent.

4302 Recreational Diseases (3-0). A lecture course examining the infections and infectious agents we may contact in leisure activities during exposure to vacation climates, pets, recreational activities, and exotic cuisine.
Prerequisite: Introduction to Microbiology or permission of instructor.

4305 Special Topics (3-0). A course dealing with selected and timely topics in biology such as Animal Physiology, Co-evolution, Aquatic Plants, or many other potential subjects. May be repeated when topic varies. Prerequisite: General Botany and General Zoology or equivalent.

4401 Molecular Biotechnology (2-4). Molecular biotechnology applies the principles of recombinant DNA technology (genetic engineering, gene cloning) to the development of agricultural and commercial products. The methods of recombinant DNA technology, molecular diagnostic systems, cloning and development of genetically modified organisms (GMO) will be discussed. Ethical issues surrounding these techniques will be addressed. Animal, plant, bacteria, and examples will be discussed. Laboratory will focus on DNA purification virus techniques, gene cloning and amplification, and DNA analysis using RFLP and PCR techniques. Prerequisite: Microbiology and General Chemistry.

4402 Ichthyology (3-2). The systematic, phylogeny, natural history, and economic importance of the fishes of the world with emphasis on those found in the fresh and salt waters of Texas. This course also serves as an introduction to Vertebrate Zoology. Prerequisite: General Zoology or equivalent.

4403 Herpetology (3-2). The systematic, natural history, and phylogeny of the amphibians and reptiles with emphasis on those found in the American Southwest. Prerequisite: General Zoology or equivalent.

4404 Ornithology (3-2). The systematic, phylogeny, natural history and field study of birds with emphasis on those found in the Trans-Pecos region of Texas. Prerequisite: General Zoology or equivalent.

4405 Plant Physiology (3-2). The study of the life processes of plants and the physical and chemical phenomena of plant cells, and their relationship to the environment. Studies of photosynthesis, transportation, translocation, nitrogen fixation, and hormones will be included with emphasis on vascular plants. Prerequisite: General Botany.

4406 Principles of Ecology (3-2). A study of the interrelationships of plants and animals with the environment. To include, but not limited to, energy flow, community and ecosystem development, ecological classification, nutrient cycling, sampling and censusing techniques, limiting factors, predator-prey relationships, and aspects of speciation. Prerequisite: General Botany or General Zoology or equivalent.

4408 Morphology of the Vascular Plants (3-2). The study of the vascular plants, including life cycles, life histories, and consideration of evolutionary trends. Field trip. Prerequisite: General Botany or equivalent.

4409 Mammalogy (3-2). The systematic, natural history, phylogeny, and economic relations of mammals of the world with particular emphasis on mammals native to the Trans-Pecos region of Texas. Museum technique and field work will be stressed.
Prerequisite: 12 hours in Biology, including General Zoology or equivalent.

4410 Medical and Veterinary Entomology (3-2). A comprehensive introduction to the insects and other arthropods of medical and veterinary importance. Lectures emphasize life-cycles, transmission of disease, and control practices. Laboratory studies emphasize taxonomy and techniques. Prerequisite: General Zoology or General Entomology or equivalent.

4411 Microbial Ecology (3-2). A study of the ecological roles of microorganisms. Examples from freshwater, marine, terrestrial and other ecosystems will be used to illustrate the activities and importance of microorganisms in these habitats. Prerequisite: Introduction to Microbiology recommended.

4412 Medical/Veterinary Microbiology (3-2). A comprehensive introduction to the microbiology of pathogenic organisms in the medical and veterinary microbiology, the immune response and pathogenesis, principles of laboratory diagnosis, bacteriology, virology, mycology, and parasitology. Laboratory will focus on specimen collection and diagnostic methods. Prerequisite: Introduction to Microbiology or consent of instructor.

4413 Collections Management (3-2). Learn the techniques and skills required to operate, curate, and manage a variety of biological collections. This will include proper handling, preservation, organization, and accessioning techniques for both zoological and botanical materials. The legal side of collection maintenance will be covered, in addition to practical applications of museums in research. Prerequisite: General Botany or General Zoology.

4420 Special Topics with Laboratory (3-2). A course offering selected topics in biology with laboratory. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or by permission of instructor.

4601 Desert Ecology (4-4). A course dealing with the biology of North American deserts, primarily the Chihuahuan Desert. Offered in summer session, several field trips including multi-day. Prerequisite: General Botany and General Zoology or permission of instructor.

4607 Special Topics Field Studies (4-4). A course offering selected topics in Biology that consist of field work. This course may be repeated if topic varies. Prerequisite: General Botany or General Zoology, or by permission of the instructor.

**Master of Science with a Major in Biology**

An individual with a bachelor’s degree may enter, if qualified, into the graduate program in Biology for the Master of Science degree. The degree may be obtained by completing 30 semester credit hours in biology, including the writing of a thesis (Plan I), by completing 36 semester credit hours and a “mini thesis” (Plan II), or by completing 36 semester credit hours in biology (Plan III). Culminating requirements for both Plan I and Plan II are a thesis defense presentation and comprehensive oral exam. For Plan III both oral and written comprehensive exam are required. Plan III must be approved by the Biology faculty. A “mini thesis” is usually a one semester project. The department will, at the discretion of the student and committee, accept toward the master’s degree 6 semester credit hours of coursework in
a department other than the major.

**GRADUATE COURSES IN BIOLOGY**


5101 *Graduate Seminar* (1-0). Discussion of pertinent topics in biology, with emphasis changing depending upon instructor.


5301 *Cacti and Succulents of the Southwest* (2-2). A study of the life cycles, life histories, and environment with special attention to survival and adaption of the cacti and succulents of the Southwest and in particular those in the Trans-Pecos region.

5302 *Molecular Techniques* (1-4). Primarily a laboratory course designed to provide skills in the purification, amplification, restriction endonuclease analysis, and sequencing of DNA. Prerequisite: Concurrent enrollment in Biology 5315.

5305 Techniques of Scientific Research (3-0). Style and format in manuscript, proposal and thesis preparation. Materials and methods of scientific investigation and science education. Orientation to graduate level and professional studies. Required in first semester or at first opportunity thereafter.

5307 *Special Topics* (3-0). A course dealing with selected and timely topics in biology. May be repeated when topic varies.

5310 *Applied Entomology* (3-0). Introduction to principles and theories of insect control strategies. Includes concepts of chemical, cultural, and physical controls, and biological and integrated pest management. Prerequisite: General Entomology or equivalent.

5311 *Evolution* (3-0). The study of the theory and current concepts of evolution, including: natural selection, gene flow, founder effect, and speciation.

5312 *Graduate Research* (0-9). Qualified students may conduct individual research under the direction and supervision of the staff. May be repeated once when topic varies.

5314 *Advanced Mammalogy* (2-2). Current issues and debates in the mammalogy literature pertaining to systematics, evolution, ecology, and population dynamics with emphasis on Southwestern United States.

5315 *Molecular Biology* (2-2). A course covering the theory and principles of molecular biology. With an emphasis on vector development and use, students will learn laboratory skills in recombinant DNA technology using a prokaryotic system. Prerequisite: Concurrent enrollment in Biology 5302.

5316 *Biostatistical Analysis I* (2-2). An introduction to statistical concepts and models applied to agricultural and biological systems. The course introduces the scientific method, inferential theory, data types, descriptive statistics, goodness of fit, contingency tables, the normal distribution and
one- and two-sample hypothesis testing. Emphasis will be placed on data analysis and interpretation using computer statistical applications. Required for MS Thesis Plan I option. Offered Fall.

5317 Biostatistical Analysis II (2-2). An advanced course in statistical concepts and models applied to agricultural and biological systems. The course will cover experimental designs, paired-sample hypotheses, multisample hypotheses (ANOVA), multiple comparisons, factorial and nested ANOVA, data transformations, linear regression and correlation, multiple regression and correlation, polynomial regression and the binomial distribution. Emphasis will be placed on data analysis and interpretation using computer statistical applications. Offered Spring.

5318 Toxic and Medicinal Plants (3-0). A graduate-level survey of toxic and medicinal plants, including their identification & classification, clinical signs of intoxication, toxic principle, mechanism of action, and treatment (if any). Emphasis is on toxic plants of West Texas and major medicinal plants of historical significance.

5403 Molecular and Classical Cytogenetics (2-4). Chromosome structure, aberrations and evolution, the origin and significance from classical and molecular points of view. Prerequisite: Permission of instructor.

5404 Systematics (3-2). Study of classical and contemporary philosophy approaches, and techniques having to do with the analysis and understanding of evolutionary relationships. Examples from botanical or zoological literature may be emphasized depending upon instructor.

5406 Phytochemistry (3-2). The study of chemical constituents of plants, including: flavonoids, alkaloids, terpenoids, isozymes, and cpDNA.

5407 Special Topics with Laboratory (3-2). A course dealing with selected and timely topics in biology with laboratory. This course may be repeated if topic varies.

5601 Field Botany (3-6). Studies of plants in their natural environments including aspects such as: taxonomy; morphology; ecology; biogeography; and/or phylogeny. Revolving emphasis (e.g., woody plants, monocots, or composites) and a flexible program according to demand. Offered in summer session, several field trips including multi-day.

5602 Field Zoology (3-6). A course devoted primarily to acquainting the student with animal life in its natural habitat. Collecting, museum techniques, systematic and ecological implications will be stressed.

5603 Environmental Microbiology (3-6). A course covering the principles and applications of microbiology in the natural environment of the desert southwest. The environmental impact of microorganisms, aspects of pollution, waste treatment, biodegradation of environmental contaminants, and nutrient cycling will be examined.

5604 Advanced Microbial Ecology (3-6). A course studying pathogenic and non-pathogenic microorganisms in natural environments: diversity, distribution, energetic, and growth of heterotrophic and autotrophic microbes in oxic and anoxic habitats. Roles of microbial populations and communities in biogeochemical cycling, ecosystem functioning, landscapes, industrial, agricultural, and environmental applications will be investigated. The course will include lab, field-oriented exercises and field trips that teach an
introduction to research methods. Advanced microscopic, culturing, molecular, and computational techniques will be used.
Prerequisites: Introduction to Microbiology, General Chemistry I, and General Zoology or equivalent.

5607 Special Topics Graduate Field Studies (3-6). A course offering selected topics in biology that consist of field work. This course may be repeated if topic varies.

6040 Thesis Research (0-18). The student will enroll in this course after earning credit for BIOL 6301 (Thesis Prospectus), each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. The course is variable for 1 to 9 credit hours, and may be repeated with approval of advisor. Credit hours earned may not be applied towards the 30 or 36 hours required for the degree.
Prerequisites: Master of Science students that have been admitted to candidacy, including earned credit for Thesis Prospectus.

6301 Thesis Prospectus (0-6). Satisfactory completion of this course will result in an acceptable prospectus to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study. The prospectus is expected to be completed promptly, and this course may not be taken more than two long semesters.

6302 Thesis Defense (0-6). The student will enroll in this course at the time of the defense, and after earning credit for BIOL 6301 (Thesis Prospectus). Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the Dean of the School, and filed in the Office of the Provost and Vice President for Academic and Student Affairs. Prerequisite: Thesis Prospectus.
Program Description
The Department of Computer Science and Mathematics offers coursework leading to Bachelor of Science degrees in both Computer Science and Mathematics, as well as minors in these fields. Some Mathematics courses may be taken for graduate credit in support of a Master of Education degree in Secondary Education with a specialization in Mathematics. Additionally, a pre-engineering program is available through the department; in which students complete most undergraduate core curriculum requirements before transferring to other universities to complete their engineering degrees (a suggested course sequence is included in the Mathematics section).

The Computer Science program offers several concentrations: Communication Design, Gaming Technology, and Traditional Computer Science. The program provides professional training in Computer Science for students interested in becoming software engineers, in becoming high School computer science teachers, or simply in augmenting other skills with the requisite knowledge of computers and programming necessary to be successful in the modern workplace.

The Mathematics program has as its primary goal the preparation of teachers of mathematics at the elementary and secondary levels. A broad variety of coursework at the undergraduate level has been designed to support this goal, as well as to adequately prepare students for careers in industry or for further study in graduate School.

Career Opportunities
Computer Science
- Computer Network Support Specialist
- Computer Operations Manager
- Database Applications Program Analyst or Designer
- Game Designer
- Game Programmer
- Programmer or Administrator
- Programming Team Member, Specializing in Design, Testing, or Documentation
- Secondary School Educator
- Computer Science Teacher Software
Engineer Systems Analyst Systems
Manager or Programmer

Mathematics
Actuary
Cryptologist
Financial Analyst
Mathematician
Math Specialist Teacher at Elementary, Middle, or High School Level
Numerical Analyst
Operations Research Consultant
Statistician
Stockbroker

Features
The department is located in the Academic and Computer Resource Center. Most of our classes utilize computer software for a deeper understanding of the material. Many opportunities to work closely with professors provide ample opportunity for undergraduate research.

Scholarships
Gary Measures Memorial Computer Science Scholarship
One award for an outstanding junior or senior Computer Science student. To be eligible, the student must have a GPA of at least 3.0 overall and a 3.0 GPA in Computer Science.

Mathematics Excellence Scholarship
Two Scholarships are awarded for full-time undergraduate Mathematics students exhibiting excellence in their coursework.

Robert P. Amacker Memorial Scholarship
One award to a junior or senior mathematics, Chemistry, or Geology major with a GPA of 3.0 or more.

Vic and Mary Jane Morgan Mathematics Scholarship
Junior or senior mathematics majors having an overall GPA of at least 3.0. Preference will be given to majors who are entering the teaching profession.
Bachelor of Science
(Computer Science Major-120 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science 1320*, 1321, 2305, 2320, 2360, 3101, 3310, 3331, 4390</td>
<td>25</td>
</tr>
<tr>
<td>Ten additional advanced hours in Computer Science</td>
<td>10</td>
</tr>
<tr>
<td>Mathematics 1315** or higher and 2340</td>
<td>6</td>
</tr>
<tr>
<td>Minor (Mathematics recommended)</td>
<td>18</td>
</tr>
<tr>
<td>English 1301, 1302, 2301 or other literature, and 3 SCH</td>
<td>12</td>
</tr>
<tr>
<td>Sophomore or advanced</td>
<td></td>
</tr>
<tr>
<td>Communication 1303 or Theatre 2304</td>
<td>3</td>
</tr>
<tr>
<td>Fine Arts: select from Fine Arts 1301; Art 1301; Music 1312, 1313; or Theatre 1302</td>
<td>6</td>
</tr>
<tr>
<td>United States History 1301, 1302</td>
<td>3</td>
</tr>
<tr>
<td>Multicultural Social Science: select from History 2301, 2302; Mexican American Studies 2301; Political Science 2307; Women's Studies 2301</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education 1150 and one activity course</td>
<td>2</td>
</tr>
<tr>
<td>Political Science 2305, 2306</td>
<td>6</td>
</tr>
<tr>
<td>Science: select from Astronomy 1401, 1402; Biology 1401, 1402; Chemistry 1401, 1402; Geology 1401, 1402, 2404; Physics 1401, 1402, 2401, 2402</td>
<td>14-16</td>
</tr>
<tr>
<td>Social Science: select from Anthropology 1301, Economics 2300, 2305; Geography 1302, 2302; Philosophy 1301; Psychology 1302; Sociology 2303</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>7-9</td>
</tr>
</tbody>
</table>

**TOTAL 120**

**Credit for Math 1315 may be obtained by presenting adequate scores on CLEP, DANTES, ACT, or SAT examinations as shown elsewhere in the catalog under the heading "Credit by Examination.**

Bachelor of Science
(Computer Science Major)

The following is a suggested sequence of courses for students seeking the Bachelor of Science degree with a major in Computer Science.

**Freshman Year**

Computer Science 1320, 1321.........................................................6
English 1301, 1302.........................................................................6
Mathematics 1315, 1316, 2340.......................................................9
Oral Communication Core Requirement............................................3
Physical Education 1150 and one other activity course ..................2
History 1301, 1302.........................................................................6

**TOTAL 32**

**Sophomore Year**

Computer Science 2305, 2320, 2360...............................................9
Minor .........................................................................................6
English 2301 and one other course numbered 2000 or higher ............6
Two courses selected from Astronomy 1401, 1402; Biology 1401, 1402; Chemistry 1401, 1402; Geology 1401, 1402, 2402....................8

**TOTAL 29**
Junior Year
Computer Science 3101, 3310, 3331, and one other course numbered 3000 or higher.................................................................10
Minor .................................................................................................6
Physics 2401, 2402 ................................................................................8
Political Science 2305, 2306 ..................................................................6

TOTAL 30

Senior Year
Computer Science 3101 and three other courses numbered 3000 or higher.................................................................10
Minor .................................................................................................6
Fine Arts Core Requirement ..................................................................3
Social Science Requirement .................................................................3
Multicultural Social Science Core Requirement .................................3
Electives ...............................................................................................4

TOTAL 29

GRAND TOTAL 120

Computer Science as a Minor

Hours
Computer Science 1320*, 1321, 2320 and either 2305 or 2360 ..........12
6 additional advanced hours in CS, CSAT, or CIS .............................6

TOTAL 18

TEACHER CERTIFICATION IN COMPUTER SCIENCE Teacher Certification in Computer Science (Grades 8-12) Required Education Courses: ED3300, 3302, 3305, 4312, 4314, 4605. Required Computer Science Courses: CS 1320, 1321, 2305, 2320, 2360, 4320; and select 9 SCH from the following: CS 3310, CS 3320, CS 3331, CS 4340; plus any other requirements needed to satisfy major or minor requirements for the student.

Additionally, any student seeking teacher certification is strongly advised to consult frequently with an advisor in both the content area of certification and in the Education Department, since state requirements for teacher certification are subject to change with little notice.

UNDERGRADUATE COURSES IN COMPUTER SCIENCE

The numbers in parentheses following the course titles indicate the number of hours of lecture and laboratory instruction per week, respectively. Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.

1320 Introduction to Programming Logic (2-2). This course provides a background in the logic of program design, to prepare the student for later computer language courses. The course will utilize design tools such as flowcharts, structured flowcharts, and pseudo code, in the context of a suitable modern programming language. Offered fall. (COSC 1305) Prerequisite: Concurrent enrollment in Math 1315.
1321 Beginning Object-Oriented Programming (2-2). This course introduces the concepts of object-oriented design using a modern programming language. The student will learn the syntax of the programming language and how to construct object classes. Programming applications will be drawn from a wide variety of commercial, technical, and scientific problem areas. Offered spring. (COSC 1320) Prerequisite: CS 1320 and Math 1315.

2303 Individual Studies (3-0). Investigation of special topics in Computer Science, conducted on an individual basis. The course may be repeated with different topics.

2305 Web Scripting Language (2-2). This course introduces the concepts of object-oriented design using a modern scripting programming language. The student will learn the syntax of the programming language and how to construct object classes. Programming applications will be drawn from a variety of commercial, technical, and scientific problem areas. Prerequisite: CS 1321

2306 Special Topics (3-0). Discussion of selected topics in computer science suitable for lower division students. The course may be repeated with different topics. Offered when needed. Prerequisite: Permission of the instructor.

2320 Data Structures and Algorithms (2-2). A third course in programming. This course introduces data abstraction and the common data structures such as stacks, queues, trees, and graphs. Searching and sorting are discussed. Offered spring. (COSC 2315) Prerequisite: CS 1321 and concurrent enrollment in Math 2340.

2360 LINUX (3-0). This introduction to the LINUX operating system covers UNIX shell commands, shell programming, AWK programming, VI test editor, the SED editor, UNIX platforms, and X-Windows. Offered spring odd years. Prerequisite: CS1321 and concurrent enrollment in Math 2340.

3101 Departmental Seminar (1-0). A forum for the presentation and discussion of results from various disciplines relating to Computer Science and Mathematics. Presentations will be made by visitors, faculty, and students. Students enrolled for credit in the departmental seminar will be expected to make at least one oral presentation during the semester. The course may be repeated during different semesters. (This course is a cross-listing of MATH 3101). Offered fall and spring. Prerequisite: Upper division standing.

3302 Parallel Programming (2-2). This course will cover the fundamental concepts of parallel programming, including GPUs to maximize performance of modern computer systems. It will include parallel programming models, GPU programming with CUDA, and cluster computer with MPI and other parallel environments. Prerequisite: Permission of the instructor.

3306 Special Topics (3-0). Discussion of selected topics in computer science suitably for upper division students. The course may be repeated with different topics. Offered when needed. Prerequisite: Permission of the instructor.
3310 Computer Communications (3-0). Course covers network systems, topology, media, the theoretical network, real-world networks, and configuration of networks. Offered fall even years. Prerequisite: CS 1321 and concurrent enrollment in Math 2340.

3320 Object-Oriented Programming (3-0). Concepts and techniques of object-oriented programming. Objects, classes, methods, inheritance, polymorphism. Memory management of objects. Comparison of object-oriented languages such as C++, Smalltalk and CLOS. Offered fall odd years. Prerequisite: CS 2320.

3331 Advanced Database Systems (3-0). Study of the concepts of database management systems. Topics include file structures, access methods, database modeling and design, structured query language (SQL), and high level language interfaces to database systems. Offered spring even years. Prerequisite: CS 2320.

4306 Individual Studies (3-0). Investigation of special topics in Computer Science, conducted on an individual basis. The course may be repeated for different topics. Offered when needed. Prerequisite: Permission of the instructor.

4320 Software Engineering (2-2). This course emphasizes the software life cycle and the tools and models that have been developed to build large systems. Planning, estimating, and managing project development are discussed. Both the structured and the object-oriented paradigms will be covered. Offered fall even years. Prerequisite: CS 2320 or permission of the instructor.

4340 Computer Architecture (2-2). Topics include combinational logic circuits and design sequential circuits, registers and counters, memory and programmable logic devices, register transfers and data paths, and sequencing and control. Offered spring odd years. Prerequisites: CS 2320 and Math 2340.

4390 Senior Project (0-6). This is a capstone course in which the student is required to complete a project demonstrating command of a significant body of computer science. Includes oral defense of a paper written in ACM style and an exit examination designed to show mastery of all computer science courses completed. This course is required of all senior Computer Science majors. Offered when needed. Prerequisite: Permission of instructor.

Bachelor of Science
(Computer Science – Communication Design Concentration - Major-120 hours)

Hours

Computer Science 1320, 1321, 2360, 6 SCH advanced..............................15
Computer Science Applied Technology: 2108, 2110, 2306, 2310
2308, 2317, 2323, 3311, 4310, 16 SCH advanced...............................39
Mathematics 1315** or higher and 2340.................................................6
English 1301, 1302, 2301 or other literature, and 3 SCH
Sophomore or advanced.................................................................12
Communication 1303 or Theatre 2304..................................................3
Fine Arts: ART 1302 or 1303, FA 2301..................................................6
United States History 1301, 1302.........................................................6
Multicultural Social Science: CSAT 1307..............................................3
Physical Education 1150 and one activity course ........................................ 2
Political Science 2305, 2306 ................................................................. 6
Science: select from Astronomy 1401, 1402; Biology 1401, 1402; Chemistry 1401, 1402; Geology 1401, 1402, 2404; Physics 1401, 1402, 2401, 2402 .................................................. 14-16
Social Science: select from Anthropology 1301, Economics 2300, 2305; Geography 1302, 2302; Philosophy 1301; Psychology 1302; Sociology 2303 ................................................................. 3
Electives ............................................................................................. 3-5

TOTAL 120

**Credit for Math 1315 may be obtained by presenting adequate scores on CLEP, DANTES, ACT, or SAT examinations as shown elsewhere in the catalog under the heading "Credit by Examination.

Bachelor of Science
(Computer Science – Gaming Technology concentration - Major-120 hours)

Hours

Computer Science 1320, 1321, 2320, 3101, 3320, 4320 .................................................. 16
Computer Science Applied Technology: 2110, 2306, 2309 2310, 2312, 2315, 3120, 3130, 3160, 3345 4310, 9 SCH advanced ................................................................. 34
Mathematics 1315**, 1316** ...................................................................................... 6
English 1301, 1302, 2301 or other literature, CSAT 3320 ........................................... 12
Communication 1303 or Theatre 2304 ................................................................. 3
Fine Arts: ART 1302, 1303 ................................................................................. 6
United States History 1301, 1302 ........................................................................ 6
Multicultural Social Science: CSAT 1307 .......................................................... 3
Physical Education 1150 and one activity course ........................................... 2
Political Science 2305, 2306 .................................................................................... 6
Science: BIOL 1402, BIOL 2404 and select two from Astronomy 1401, 1402; Biology 1401, Chemistry 1401, 1402; Geology 1401, 1402, 2404; Physics 1401, 1402, 2401, 2402 .................................................. 14-16
Social Science: select from Anthropology 1301, Economics 2300, 2305; Geography 1302, 2302; Philosophy 1301; Psychology 1302; Sociology 2303 .................................................. 3
Electives: THEA 2307 is recommended .......................................................... 7-10

TOTAL 120

**Credit for Math 1315 may be obtained by presenting adequate scores on CLEP, DANTES, ACT, or SAT examinations as shown elsewhere in the catalog under the heading "Credit by Examination.

UNDERGRADUATE COURSES IN COMPUTER SCIENCE APPLIED TECHNOLOGY

1307 Art History for the Designer (3-0). This course is a survey of the visual arts of the world tailored specifically to the needs of designers. It will cover all regions and periods of the visual arts and focus on how students can utilize historical styles for their own design work. Emphasis will be placed on how to replicate authentic and historical styles for a variety of design
purposes, including gaming, print, costume, theater, and communication design applications. This course meets the multicultural requirement.

2108 Web Development Programming (1-0). A class covering client/server programming in various operating systems, including JAVA script, ASP, PHP, and others.


2306 Basic Television Technology (3-0). Introductory course dedicated to basic television principles as related to game technology and communication design. Including, but not limited to camera, sound, lights, story board, and basic production elements to be used with green screen technology.

2308 Web Page Development (3-0). Layout and design of web pages, including structuring the page with proper alignment, consistency and site navigation; visual appeal of color and concepts for choosing color schemes that best represent the purpose of the website; and consideration of copyright law as applied to web page technology.

2309 Introduction to Game Design (3-0) Students will study a range of game genres in order to understand the fundamentals of game design and what makes a game interesting, addictive, and fun. Game ideas will be developed using paper prototyping and, later in the course, digitally prototyped using game-creation software. Prerequisite: CS 1321

2310 Introduction to Digital Imaging (3-0). This course covers digital imaging techniques including Photoshop and Illustrator. The course will focus on digital image editing, digital painting and illustration.

2312 3-D Design (3-0). This course provides an introduction to creating 3-dimensional graphics using Maya. Student will learn how to build, light, and animate 3-dimensional objects for use in gaming and animation.

2315 Introduction to Game Programming (3-0). A course designed to introduce students to programming languages and techniques used in the computer gaming industry. This course serves as the foundation for all other courses in the Gaming Technology concentration. Prerequisite: CS 1321

2317 Layout Design Programming (3-0). This course will support the technical/programming needed for CS 2316. Various programs such as PhotoShop, Illustrator, and InDesign will be explored and applied for use in web pages, human-computer interfaces, and e-publishing.

2323 Writing for Digital Media (3-0). The main focus of the course is the transition of invention and composition to digitally communicated formats emphasizing best practices for design, composition, and usability in the creation and implementation of digital content. Prerequisite: ENG 1302

2360 Mobile Programming (3-0). This class will address programming principles to be applied in Android and MAC iOS operating systems. Prerequisite: CS 1321
3120 Gaming and Script Programming (1-0). This course will address gaming script languages to develop games and applications for mobile devices such as iPhone, iPad, Android, and others. Prerequisite: CS 1321

3130 Animation Programming (1-0). A laboratory course in which students apply techniques learned in CSAT 3330 using software available in the Technology Learning Center. Concurrent enrollment: CSAT 3330

3160 User Interface Programming (3-0). This course will focus on the theory and implementation of creating effective interactive displays, interfaces and environments for controlling a variety of computer applications including games and communication, and other programs, including HCI (Human Computer Interface) applications.

3311 History of Communication Design (3-0). This course introduces the history of visual communication, including text and image. Lectures, slides, and discussions focus on the work of important practitioners in the field and on the historical and cultural significance of design, technology, and innovation.

3320 Gaming and Screenwriting (3-0) A class exploring hot to simulate movement and life using 2-dimensional and 3-dimensional means. Students will study selected examples from history of animation and create their own short pieces in a variety of software. Prerequisites: CSAT 2315

3321 Branding and Identity Design (3-0). This course explores methods for designing effective logos, creating marketing materials, and establishing advertising programs using computer technology.

3341 Video Editing for Gaming (3-0). Computer driven course focused on non-linear digital editing processes utilizing green screen technology.

3345 Techniques of Video Production (3-0). Production course reviewing use of camera and lighting techniques and incorporating studio sound and motion capture technology. Students learn studio production planning, lighting, and audio along with basic video engineering. Students will practice all crew positions, including floor director, camera operator, lighting technician, audio technician, technical director, and program director. Prerequisite: CSAT 2306

4310 Senior Capstone (3-0). The Senior Capstone is the culminating course in the CSAT concentrations sequence. Each capstone is implemented by students with the help and encouragement of an academic advisor. Capstone experiences allow each student to demonstrate the capacity to bring information, skills, and ideas acquired from the major to bear on one significant project. It is aimed at providing students with the opportunity to integrate the knowledge and skills they have acquired as Computer Science majors as well as provide experiences for students to exhibit competent Computer Science skills within their concentration learned during their program of study in order to prepare for a career in Computer Science Applied Technology.

UNDERGRADUATE COURSES IN COMPUTER

203
INFORMATION SYSTEMS

3306 Special Topics (3-0). A course designed for discussion of current issues and trends in computer information systems. May be repeated for credit as topics change.

3317 Electronic Commerce (3-0). Focuses on e-commerce from three perspectives: (1) customer-business; (2) business-business; and (3) intra-organization. The Internet, Intranet and Extranets, electronic data interchange (EDI), electronic payments systems, tax issues, and global policy will be investigated. Students will create or enhance a web page as part of the course requirements.

3320 Information Security and Disaster Recovery (3-0). Focuses on concepts and principles of system and data security. Issues covered include risks and vulnerabilities; policy formulation; controls and protection methods; database security; encryption; authentication technologies; host-based and network-based security issues; and issues of law and privacy. Discussions include firewall design and implementation; secure Internet and Intranet protocols; and techniques for responding to security breaches.

3323 Human and Computer Interaction (3-0). A course designed to introduce the student to the dynamic process of human-computer interactions. Key elements will focus on user interface, ease of use, speed, comfort level, and software design strategies.

3370 Systems Analysis and Design (3-0). Focuses on the overview of a systems development life cycles. Emphasis is on current system analysis, data flows, data structures, file design, input and output designs and program specifications. Discussion of information gathering and reporting activities during the transition from analysis to design.

Prerequisite: GBA 3350

Bachelor of Science
(Mathematics Major--120 Semester Credit Hours)

Core Curriculum

Basic Skills Component ................................................................. 46
English 1301 and 1302................................................................. 6
Mathematics 1315*........................................................................ 3
Communications, select from Comm 1303 Thea 2304...................... 3

Basic General Knowledge

Fine Arts, select from FA 1301, Art 1301, Music 1312 or 1313, or Thea 1302 ........................................................................ 3
Kinesiology, PE 1150 and one activity course........................................ 2
English 2301 or other Literature course in English ................................ 3
Laboratory Science, Physics 2401, 2402 ............................................. 8
Social Sciences, select from Anth 1301, Eco 2300, Eco 2305
Geog 1301 or 2302, Phil 1301, Psy 1302 or Soc 2303......................... 3

Integrity, Tolerance, Ethical Values, and Citizenship

American History, select two from Hist 1301, 1302, or 3309................. 6
State Government ........................................................................... 3
Federal Government ........................................................................ 3
Multicultural, select from Hist 2301 or 2302, MAS 2301,
PS 2307, or WS 2301 ..................................................................... 3

General Education........................................................................ 12-14

204
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, select one 2000 or higher course</td>
<td>3</td>
</tr>
<tr>
<td>Physical and Life Sciences, select two from astronomy, Biology, or Chemistry</td>
<td>6-8</td>
</tr>
<tr>
<td>Mathematics 1316*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Major</strong></td>
<td>37</td>
</tr>
<tr>
<td>Mathematics 2413, 2414, 2415, 2330, 3101, 3320, 3340, 4320, 4330, and 4360</td>
<td>31</td>
</tr>
<tr>
<td>Additional 3 advanced SCH in Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science 1320</td>
<td>3</td>
</tr>
<tr>
<td><strong>Minor</strong></td>
<td>18</td>
</tr>
<tr>
<td>(at least 6 SCH advanced)</td>
<td></td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>5-7</td>
</tr>
<tr>
<td><strong>TOTAL 120</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Majors in mathematics may obtain credit for Math 1315 and/or Math 1316 by presenting adequate scores on CLEP, DANTES, ACT, or SAT examinations as shown elsewhere in the catalog under the heading, "Credit by Examination" and are encouraged to do so.

**Bachelor of Science (Mathematics Major)**

Following is a suggested sequence of courses for students seeking the Bachelor of Science degree with a major in Mathematics. The minor in Computer Science shown in this sequence may be replaced with a minor in some other discipline.

**Freshman Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 2413, 2414</td>
<td>8</td>
</tr>
<tr>
<td>English 1301, 1302</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 1401, 1402</td>
<td>8</td>
</tr>
<tr>
<td>Oral Communications Core Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education and one activity course</td>
<td>2</td>
</tr>
<tr>
<td>History 1301, 1302</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 2330, 2415</td>
<td>7</td>
</tr>
<tr>
<td>Computer Science 1320, 1321</td>
<td>6</td>
</tr>
<tr>
<td>English 2301 and one other course numbered 2000 or higher</td>
<td>6</td>
</tr>
<tr>
<td>Fine Arts Core Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Core Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Political Science 2305 and 2306</td>
<td>6</td>
</tr>
<tr>
<td>Multicultural Core Requirement</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>31</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 3320, 3340, one 4320, 4330, or 4360</td>
<td>9</td>
</tr>
<tr>
<td>One other advanced Mathematics course</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science 2305 and 2320</td>
<td>6</td>
</tr>
<tr>
<td>Physics 2401 and 2402</td>
<td>8</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>29</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two of Mathematics 4320, 4340, 4360</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 3101 and one other SCH advanced course</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL 120</strong></td>
<td></td>
</tr>
</tbody>
</table>
Computer Science, 6 SCH numbered 3000 or higher ........................................6
Electives (36 SCH total of advanced coursework are required for graduation, including major and minor) ..................14

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>30</td>
</tr>
<tr>
<td>as a Minor</td>
<td></td>
</tr>
<tr>
<td>Mathematics 1315</td>
<td>0-6</td>
</tr>
<tr>
<td>and 1316 if needed* ...........................................</td>
<td></td>
</tr>
<tr>
<td>Mathematics 2413, 2414, 2415, and 2330 ..................15</td>
<td></td>
</tr>
<tr>
<td>6 additional advanced SCH in Mathematics ..............6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>21-27</td>
</tr>
<tr>
<td>as a Minor</td>
<td></td>
</tr>
</tbody>
</table>

*Minors in mathematics may obtain credit for Math 1315 and/or Math 1316 by presenting adequate scores on CLEP, DANTES, ACT, or SAT examinations as shown elsewhere in the catalog under the heading, "Credit by Examination" and are encouraged to do so.

**TEACHER CERTIFICATION IN MATHEMATICS**

**Teacher Certification in Mathematics (Grades 8-12)**

Required Education Courses: ED 3300, 3302, 3305, 4312, 4314, and 4605

Required Mathematics Courses: Math 1315 and 1316 (or credit by examination), Math 2330, 2413, 2414, 2415, 3301, 3350, and three advanced level Mathematics courses, plus any other requirements needed to satisfy major or minor requirements for graduation.

**Elementary Mathematics Specialist Certification (Grades 4-8)**

All elementary-level certification degree plans are done in the Department of Education under the Interdisciplinary Studies major. See the Education section of this catalog for information on Elementary Education Areas of Specialization, Mathematics at the elementary (grades 4-8) level. Required Mathematics Courses: Math 1315 and 1316 (or credit by examination), Math 1342, 2413, 2310, 2311, 2340, 2413, 3301, 3310, and 3350.

Any student seeking teacher certification is strongly advised to consult frequently with an advisor in both the Department of Education and in the Department of Mathematics. State requirements for teacher certification often change on short notice, and requirements stated in a printed catalog are sometimes out of date.

**PRE-ENGINEERING PROGRAM**

Students participating in the pre-engineering program take courses in science, mathematics, and general education for two years before transferring to an engineering school. During the first semester of the student's second year, he or she should begin the application process to the chosen engineering school. Following is the recommended sequence of courses for pre-engineering students.

**Hours**

<table>
<thead>
<tr>
<th></th>
<th>Freshman Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 1315</td>
<td>6</td>
</tr>
<tr>
<td>1316 (If needed)</td>
<td></td>
</tr>
<tr>
<td>Mathematics 2413, 2414</td>
<td>8</td>
</tr>
<tr>
<td>English 1301, 1302</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 1401, 1402</td>
<td>8</td>
</tr>
<tr>
<td>Physical Education 1150 and one other activity course</td>
<td>2</td>
</tr>
</tbody>
</table>
History 1301 ........................................................................................................ 3

TOTAL 33

Sophomore Year
Mathematics 2330, 2415 and 3320 ................................................................. 10
Computer Science 1320, 1321 ................................................................... 6
Physics 2401, 2402 ....................................................................................... 8
History 1302 .................................................................................................. 3
Political Science 2305, 2306 ....................................................................... 6

TOTAL 33

UNDERGRADUATE COURSES IN MATHEMATICS

Students who are working toward a Bachelor of Arts or Fine Arts degree must complete at least one course from 1310, 1315, 1316, 1342, or 2413. Students working toward a Bachelor of Science degree must complete an additional course numbered 1310 or higher. Students working toward a Bachelor of Business Administration degree must complete one semester of calculus, usually Math 1325. Students in Interdisciplinary Studies (working toward teacher certification at the elementary or middle school level) must take either Math 1315 or 1342 (Math 1315 is recommended), as a prerequisite for Math 2310.

Because of the highly sequential nature of the Mathematics curriculum, students are strongly advised not to enroll for any course until a grade of C or better is earned in any prerequisite course.

The numbers in parentheses following the course titles indicate the number of hours of lecture and laboratory instruction per week, respectively. (Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

1310 Introduction to University Mathematics (3-0). This course is an introduction to a selection of college-level math topics. This course typically covers topics selected from the following: problem-solving, counting, the real number system, sets, geometry, solutions of linear and quadratic equations, elementary probability, financial math, the mathematics of voting, and fair division. This course satisfies the Common Core Curriculum requirement for Mathematics and is recommended for students who do not plan to take Calculus I (Math 2413). Offered fall, spring, and summer. (MATH 1324)
Prerequisites: Completion of Math 0300 or an appropriate placement score.

1315 University Algebra (3-0). A university level algebra course for students who plan to take calculus. Topics include linear and quadratic equations and functions, inequalities, graphs and zeros of polynomial and rational functions, exponential and logarithmic functions, and systems of equations and inequalities. Offered fall, spring, and summer. (MATH 1314)
Prerequisite: Math 0301 or a satisfactory score on the Mathematics Placement Exam. (Math TASP 260 or higher).

1316 Trigonometry (3-0). Directed angular measure, definitions and evaluation of circular and trigonometric functions, graphs of the trigonometric
functions, the inverse trigonometric functions and their graphs, solution of triangles by the law of sines and law of cosines, trigonometric identities and conditional equations, and applications of trigonometry to analytic geometry. Offered fall, spring, and summer. Prerequisite: Completion of or concurrent enrollment in Math 1315.

1325 Business Calculus (3-0). A modeling based introduction to graphing, differentiation, integration and optimization, with a focus on business applications. The use of a graphing calculator or a computer algebra system will be required. Offered spring. Prerequisite: Math 1315

1342 Statistics (3-0). An introductory statistics course designed to give the student the critical thinking skills necessary to interpret statistical information. This course will prepare the student for further statistical work in his/her field. Topics include: measures of central tendency, measures of variation, normal distributions, hypothesis testing, and graphical representations. Use of statistical software and real-world data is integrated throughout the course. Offered fall, spring and summer. Prerequisites: Completion of MATH 0301 or a satisfactory score on the Mathematics Placement Test.

2301 Individual Studies (3-0). Independent study of selected topics in mathematics. This course may be repeated during different semesters. Prerequisite: Permission of instructor.

2306 Special Topics (3-0). Discussion of selected topics in mathematics, at or above the level of college algebra, suitable for lower division students. The course may be repeated for different topics. Offered when needed. Prerequisite: Permission of instructor.

2310 Foundations of Elementary Mathematics I (3-0). First course in required mathematics content sequence for preservice elementary and middle School teachers. Topics include problem-solving techniques, reasoning, study of sets, systems of numeration, natural numbers, integers, number theory and rational numbers. Emphasis on problem-solving as a pedagogical tool with integration of manipulative-based explorations. Offered fall. Prerequisites: Satisfactory completion Math 1315 or Math 1342 with a grade of C or better; or equivalent advanced credit placement.

2311 Foundations of Elementary Mathematics II (3-0). Second course in the mathematics content sequence for preservice elementary and middle School teachers. Topics include: fraction operations, decimals, real numbers, ratio and proportion, percent, basic notions of geometry, measurement, and basic probability and statistics. Offered spring. Prerequisites: Satisfactory completion of Math 2310 with a grade of C or better.

2330 Linear Algebra (3-0). Systems of linear equations, matrices, determinants, vectors and vector spaces, matrix inversions and linear transformations, determination of eigenvalues and eigenvectors, and numerical approximation methods of linear algebra. Use of a programmable graphing calculator may be required. Students are also introduced to related mathematical resources on the Internet. Offered fall. Prerequisite: Math 1316.
**2340 Discrete Mathematics (3-0).** Sets, Boolean algebra and Venn diagrams, function, elementary propositional and predicate logic, proof techniques, graph theory, combinatorics and elementary probability, and modular arithmetic. Offered spring.
Prerequisite: Math 1315.

**2413 Calculus I (3-2).** Topics include limits and continuity, the derivative, techniques for differentiation of algebraic, logarithmic, exponential and trigonometric functions applications of the derivative and anti-differentiation. Offered fall.
Prerequisite: Math 1315 and Math 1316 or equivalent scores or courses.

**2414 Calculus II (3-2).** Topics include the definite integral and its applications, techniques of integration, improper integrals, Taylor's formula and infinite series. Offered spring.
Prerequisite: Math 2413.

**2415 Calculus III (3-2).** This course includes the study of the calculus of functions of several variables and topics in vector calculus including line and surface integrals, Green's Theorem, Divergence Theorem, and Stokes' Theorem. Offered fall.
Prerequisite: Math 2414.

**3101 Departmental Seminar (1-0).** A forum for the presentation and discussion of results from various disciplines relating to Computer Science and Mathematics. Presentations will be made by visitors, faculty, and students. Students enrolled for credit in the departmental seminar will be expected to make at least one oral presentation during the semester. The course may be repeated during different semesters. (This course is a cross-listing of CS 3101). Offered fall and spring.
Prerequisite: Consent of Instructor.

**3301 Geometry (3-0).** This course consists of a modern formal development of Euclidean geometry and a limited introduction to non-Euclidean geometry, with an integration of topics, methods, and use of technology appropriate for prospective middle grade and secondary mathematics teachers. Offered fall or spring as needed.
Prerequisite: Math 2311 or Math 2330; or consent of instructor.

**3303 Special Topics (3-0).** Discussion of selected topics in mathematics. The course may be repeated for different topics. Offered when needed.
Prerequisite: Permission of instructor.

**3320 Differential Equations (3-0).** First order differential equations, linear differential equations of higher order, power series solutions, systems of linear differential equations, and applications. Use of a programmable graphing calculator may be required. Students are also introduced to a symbolic algebra system running on a personal computer. Offered spring.
Prerequisite: Math 2414.

**3330 Number Theory (3-0).** This is an introductory course in basic number theory via its important applications in modern cryptography. Topics include divisibility and the Euclidean algorithm, congruences, finite fields, quadratic residues, enciphering matrices, public key cryptography, pseudoprimes, and factoring techniques. Offered fall or spring when needed.
Prerequisite: Math 2414.
3340 *Foundations of Higher Mathematics* (3-0). A transition course to higher mathematics. Students learn how to organize and structure their mathematical thoughts, how to read and manipulate abstract definitions, and how to prove or refute proofs by effectively evaluating them. Topics such as propositional logic, set theory, and techniques of proving will be the basis for discussions on functions, sequences, relations, limits, cardinality, divisibility, the real numbers and complex numbers. Prerequisite: Math 2414.

3350 *History of Mathematics* (3-0). Biographies of a representative sample of mathematicians along with an exploration of the chronological development of important ideas in mathematics, particularly in the fields of geometry and number theory. Offered fall or spring when needed. Prerequisite: Math 2413.

4303 *Individual Studies* (3-0). Independent study of selected topics in mathematics. This course may be repeated during different semesters. Prerequisite: Permission of instructor.

4320 *Analysis I* (3-0). Topology of the real line, sequences of real numbers, and continuity of functions of a single real variable. Includes an introduction to logic, set theory, and cardinal arithmetic. Rotated with 4330 and 4360. Prerequisite: Math 2415.

4321 *Analysis II* (3-0). A continuation of Math 4320. The course includes rigorous treatments of differentiation, the Riemann integral, sequences and series of functions, and an introduction to Fourier series. Offered when needed. Prerequisite: Math 4320.

4330 *Modern Algebra I* (3-0). Group theory and its applications to number theory and geometry, introduction to rings, integral domains, and fields. The course may require the use of programmable graphing calculator and/or a symbolic algebra system running on a personal computer. Rotated with 4320 and 4360. Prerequisite: Math 2330 and Math 2415.

4331 *Modern Algebra II* (3-0). A continuation of Math 4330. This course continues the study of rings and fields with a brief introduction to Galois Theory. The course focuses on polynomial rings, vector spaces, and rings of matrices. Offered when needed. Prerequisite: Math 4330.

4340 *Mathematical Statistics* (3-0). Classical probability theory, discrete and continuous random variables, distribution functions, expectation, law of large numbers, central limit theorem, applications. Offered when needed. Prerequisite: Math 2414.

4360 *Complex Variables I* (3-0). An introductory course covering functions of one complex variable. Topics will include: the algebra of complex numbers, geometry in the complex plane, polar representation of complex numbers, analytic functions, mappings, continuity, differentiability, Cauchy-Riemann equations, elementary functions of a complex variable, contour integrals and the Cauchy integral formula. Rotated with 4320 and 4330. Prerequisite: Math 2415.

4361 *Complex Variables II* (3-0). Further treatment of functions of a single
complex variable. Topics will include: Taylor and Laurent series, Residue theorems, integration, mappings using elementary functions, and conformal mappings. Offered when needed.
Prerequisite: Math 4360.

4390 Senior Project (0-6). Directed individual studies in a mathematical topic of interest to the student. The course requires a written paper appropriately documented in AMS style and an oral presentation. The student will also be expected to answer questions from faculty for purposes of curriculum assessment. Offered fall and spring.
Prerequisite: Completion of any 4000-level course with a grade of "C" or better.

GRADUATE COURSES IN MATHEMATICS

The undergraduate courses Math 3301, 3330, 3350, 4320, 4321, 4330, 4331, 4340, 4360, and 4361 may be taken for graduate credit, as described elsewhere in this Catalog under "Undergraduate Courses for Graduate Credit." The Department of Mathematics also offers the following graduate courses.

5301 Special Topics in Mathematics (3-0). Selected topics in theoretical and applied mathematics. The course may be repeated for different topics. Offered when needed.
Prerequisites: Permission of instructor.

5302 Topics in Mathematics Education (3-0). Selected topics in mathematics and mathematics education which relate to the teaching of K-12 mathematics. The course may be repeated for different topics. Offered when needed.
Prerequisite: Permission of instructor.

5303 Individual Studies (3-0). Independent study of selected topics in mathematics. This course may be repeated during different semesters.
Prerequisite: Permission of instructor.
EARTH AND PHYSICAL SCIENCES
(including Astronomy, Chemistry, Geology and Physics)

Department of Biological and Earth Physical Sciences
College of Arts and Sciences
Office: Warnock Science Building, 314
Phone: (432) 837-8259
E-mail: geology@sulross.edu

Professor and Chair: Christopher Ritzi, Ph.D.

Professors: David Rohr, Ph.D., and Kevin Urbanczyk, Ph.D.

Associate Professor: Md. Abul Kalam, Ph.D.

The Department of Biological and Earth Physical Sciences provides its students with a background in, and an appreciation for, certain aspects of Astronomy, Chemistry, Geographic Information Systems, Geology, Physical Science, and Physics. Degree programs available include the BS in Geology and the MS in Geology. The mission of the Department is to provide the opportunity to master analytical and computational skills and to master and create knowledge in the area of Earth and Physical Sciences.

CAREER OPPORTUNITIES

Chemistry
The Chemistry program has a primary goal of supporting other disciplines whose subject matter depend, in part, on the knowledge of the principles of chemistry. It presents non-science students with an overview of the ideas, methods, and achievements in the science of chemistry.

The Chemistry program is aggressively engaged in supporting non-chemistry disciplines such as Biology, Geology, Range Animal Science, and Criminal Justice.

Geology
Employment in industry (petroleum, natural gas, mining, and service companies): Geologists explore, develop, and produce fossil fuel, metallic and nonmetallic resources in North America and world-wide.

Service with state and federal agencies: Volcanologists study volcanoes to understand the hazards and predict eruptions. Hydrogeologists study the occurrence, movement, abundance, distribution and quality of subsurface and surface waters.

Examination and analysis of environmental issues: Environmental geologists study the interaction between the Earth and human activities to solve problems associated with pollution, waste management, and natural hazards.

Employment in Environmental Geosciences: Employers in the environmental field are large, multidisciplinary engineering companies and smaller specialty firms. In the larger organizations, geoscientists are part of long-term projects in which they work with scientists from other disciplines. In the smaller firms, geoscientists work with environmental laws and regulations, make
environmental risk assessments, and write technical reports. The fields that should remain strong in the future are water resources investigations and remediation of contamination.

Chemistry Minor
Students in Chemistry have available to them some of the most current teaching tools - such as Ultraviolet and Visible Spectrophotometer, Infra Red (IR) Spectrophotometer, Nuclear Magnetic Resonance (NMR) Spectrometer, Gas Chromatograph, Hewlett-Packard Gas Chromatograph with Isothermal, and Programmed Temperatures features, Vacuum Oven, Micromaster microscope model CK, and several optical microscopes, Abbe-3L Refractometer, Accumet pH meter to measure pH values, Sentron pH meters to measure pH of semi-liquids in trace quantities, digital thermometers, Analytical Balances to weigh trace quantities of samples, Parr Bomb Calorimeter, Varian Gas Chromatograph (Model CP-3800).

SCHOLARSHIPS
Robert A. Welch Foundation Undergraduate Scholarship
Available in Fall/Spring/Summer semesters up to $3000.00
Raymond B. Seymour Award for $300.00
Kundan Lall and Rampyari Rangra Chemistry Endowment for $500

Geology Program Description
Sul Ross State University, located in mountainous West Texas, is in an ideal locality for geologic studies. The campus, surrounded by the Trans-Pecos volcanic field, is only twenty minutes from the famous sedimentary area of the Marathon Basin and Glass Mountains and only two hours from Big Bend National Park.

The Department offers undergraduate courses leading to the Bachelor of Science degree in (1) Professional Geology and (2) Earth Science for Teachers.

The first program embodies a concentrated training to prepare majors for graduate study or employment as a professional geologist.

The second program trains students to pursue elementary and high School teaching careers.

The department also offers graduate courses leading to a master of science in Geology.

Features
The department has the following: scanning electron microscope (SEM), atomic absorption spectrophotometer, clean lab facilities, low temperature plasma asher, Hach portable water analysis lab, rock and mineral preparation laboratory, Frantz isodynamic magnetic mineral separator, desk computers, rock thin sectioning equipment, petrographic and binocular microscopes, sonic sifter, river rafting equipment, field geology surveying equipment, GPS units, and audio-visual equipment.

In 1999 the Department established, with National Science Foundation funding, a Geographical Information System (GIS) laboratory. The primary purpose of the laboratory is to teach introductory GIS techniques at the
sophomore level, and to allow these students use of the laboratory in other upper division classes. A secondary purpose of the lab is for upper division and graduate GIS classes, and for faculty research.

The GIS laboratory currently has 13 computers, one large format digitizing tablet, one large format plotter, a printer, a scanner, and a 35mm slide maker. The primary software used in the GIS laboratory is ArcMap, a product of ESRI (Environmental Systems Research Institute). The lab has a 25 seat license for the ArcView version (9.x), and an additional single license for ArcInfo. The university has a site license for the ESRI software, and the GIS lab uses the ARC-Info version. Available extensions include Spatial Analyst and 3D Analyst. The lab also maintains a license for Arcview 3.x with Spatial, 3D, and Image Analyst extensions. For Remote Sensing applications, the lab maintains 5 copies of ERDAS Imagine Professional with one additional license for both Vector and Virtual GIS. A list of other available technical software includes: Visual MODFLOW, Rockworks, Golden Software's Surfer and Didger, SigmaPlot, and general word processing/spreadsheet/database software. The laboratory benefits from cooperative agreements with the Texas Parks and Wildlife Department and The Pan American Center for Earth and Environmental Studies. Through these and other sources, the laboratory has compiled an extensive spatial library for the Trans-Pecos and northern Mexico region, including 21 Landsat scenes, complete coverage in standard GIS datasets (DRG, DOQ, NED, Transportation), and additional geologic, hydrologic and biologic datasets.

**GEOLOGY SCHOLARSHIPS**
(Contact Financial Aid Office for details and applications).

**Joseph B. Dishron Geology Scholarship**
$250 per year to a Sophomore, Junior or Senior, Geology major or minor who has completed 11 hours or more of geology coursework and has an overall 3.0 GPA or better and a GPA of 3.0 or better in geology. $250 per year to a geology graduate student who has completed at least 9 hours and has chosen thesis option. Cumulative GPA of 3.0 or higher as an undergraduate and GPA of 3.5 or higher as a graduate student.

**W. N. McAnulty Geology Academic Scholarship**
About $400 to $900 per year to undergraduate and graduate students who have completed 8 hours of geology and have a 3.0 average.

**David M. Rohr Scholarship**
$300 to geology undergraduate and graduate students who have completed 12 hours of geology.

**Petro Amigos Scholarship**
About $500 to an undergraduate majoring in academic discipline which supports the petroleum industry.

**Bill and Elizabeth Winter Geology Scholarship**
$500 to $1000 to a geology undergraduate or graduate student or Environmental Science major. Preference to geology undergraduates. Must have an overall GPA of 3.0 or better and geology GPA of 3.0 or better.

**Robert P. Amacker Memorial Scholarship**
$500 per year to a Junior or Senior, Geology or Chemistry major, with a GPA of 3.0 or better.
Betty and John Dow Harris Humanitarian Scholarship
$1,000 per year. Undergraduates, American Citizen, Agriculture or Geology major preferred.

UNDERGRADUATE COURSES IN ASTRONOMY

1401 Descriptive Astronomy I (3-2). A descriptive, non-mathematical course that deals mainly with the solar system and its components. Emphasis is on the study of the celestial sphere, the history of astronomy, motions in the heavens, and the survey of planets. This course includes observations of the night sky and solar objects with various university telescope systems.

1402 Descriptive Astronomy II (3-2). A descriptive, non-mathematical course that deals mainly with stellar and galactic astronomy, but begins with a brief survey of the solar system. Emphasis is on the study of properties of stars, star clusters, nebulae, interstellar gas and dust, the Milky Way galaxy, and exterior galaxies. The course includes instruction in the university planetarium as well as telescopic observations.

Bachelor of Science
We offer Texas teacher certification in Physical Science (secondary certification). See your major advisor for details.

Chemistry as a Minor
18 SCH of Chemistry to include 6 SCH advanced. Recommended courses are 1401, 1402, 2405 plus 6 SCH at 3000-4000 level.

UNDERGRADUATE COURSES IN CHEMISTRY

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

1401 General Chemistry I (3-2). This course covers introduction to matter, atomic theory, atomic structure, concept of mole, chemical units of concentration, concept of pH, concept of balanced chemical reaction equation, chemical bonding, and kinetic molecular theory of gases. (CHEM 1411)
Prerequisite: Math 1315 or equivalent. Advanced placement in Chemistry 1401 may be given on successful completion of advanced placement examination.

1402 General Chemistry II (3-2). This course covers colligative properties of solutions, chemical kinetics, chemical equilibrium, acid-base systems, energy relationships in chemistry reactions, and electrochemistry. The laboratory includes an introduction to qualitative and quantitative analysis. (CHEM 1412) Prerequisite: Chemistry 1401.

2405 General Quantitative Analysis (2-4). This course includes chemical equilibria, acid-base equilibria, buffers, solubility equilibria, and volumetric methods of analysis. (CHEM 2401)
Prerequisite: Chemistry 1402.

3309 Biochemistry I (3-0). Fundamental principles of Biochemistry will be covered in this course. Chemistry and functions of amino acid proteins,
nucleic acids, and their functions in the storage and transfer of biological information, bioenergetics and metabolism. 
Prerequisite: Chemistry 3407

3402 Forensic Chemistry (3-1). This laboratory course is designed to introduce students interested in law enforcement professions to methodologies such as filtration, recrystallization, titration, pH determination, and chemical reactions. Students will use the optical microscope for testing pieces of evidence, develop and lift latent finger prints, perform micro-testing of drugs, and utilize a novel technique developed at SRSU for the preparation of hair fibers for SEM analysis.

3403 Physical Chemistry I (3-2). This course includes an in-depth study of gaseous systems, thermodynamics, phase equilibria, colligative properties of solutions, and surface chemistry.
Corequisite: Math 2413 or equivalent, and Chemistry 2405.

3404 Physical Chemistry II (3-2). This course includes an in-depth study of statistical thermodynamics, molecular reaction dynamics, reaction kinetics, electrochemistry, and homogenous and heterogeneous equilibrium.
Prerequisite: Chemistry 3403; Corequisite: Math 3320.

3407 Organic Chemistry I (3-2). A thorough study of the chemistry of aliphatic and aromatic hydrocarbons and their derivatives. Special emphasis on stereochemistry spectroscopy, reaction mechanisms, and fundamental principles of organic chemistry.
Prerequisite: Chemistry 1402.

3408 Organic Chemistry II (3-2). The study of heterocyclic compounds, carbohydrates, amino acids, proteins, and steroids.
Prerequisite: Chemistry 3407 or permission of the instructor.

4209 Biochemistry II (2-0). Current articles on selected topics will be chosen, and article written and seminar presented. Emphasis will be given on structures and mechanisms of replication, transcription and translation systems.
Prerequisite: Chemistry 3309

4300 Undergraduate Research. Individual research or studies on topics of general interest encouraged. May be repeated once for credit. (On demand)

4304 Advanced Inorganic Chemistry (3-0). This course involves an in depth study of wave mechanical principles, chemical bonds, comparison of valence bond and molecular bond theories, coordination compounds, and inorganic nomenclature. Prerequisite: Chemistry 3404.

4307 Qualitative Organic Analysis (3-0). The isolation and identification of organic compounds by modern chromatographic and spectroscopic techniques. Prerequisite: Permission of instructor.

4311 Special Topics (3-0). A course covering various topics in Chemistry. May be repeated for credit when topic varies.

4401 Instrumental Analysis (2-4). The theory and application of instrumental methods such as gas chromatography, infra red spectroscopy, nuclear magnetic resonance spectroscopy, atomic absorption spectroscopy, and ultra-violet and visible spectroscopy.
Prerequisite: Chemistry 2405 or permission of instructor.
4402 Special Problems (3-3). Individual directed readings and conference on special topics in Chemistry. A lecture or seminar format may be used when sufficient interest exists in a topic.

Geology

Bachelor of Science

(Geology Major-120 hours)

Geology

Select from Geology 2404 or 2407 ................................................................. 4
Geology 2401, 3402, 3408, 3601, 4401, 4403, plus 6 SCH
Advanced ........................................................................................................... 32
Electives ........................................................................................................... 4-7
English 1301, 1302, 2301 or other literature, and
3 SCH sophomore or advanced .................................................................. 12
Communications 1303 or Theatre 2304 .................................................... 3
Fine Arts: select from Fine Arts 1301; Art 1301;
Music 1312, 1313; or Theatre 1302 .............................................................. 3
United States History ..................................................................................... 6
Mathematics: select from 1310, 1315, 1316, 1342, 2413, or higher......... 6-7
Multicultural Social Science: select from History 2301, 2302; Mexican American Studies 2301; Political Science 2307;
Women's Studies 2301 ................................................................................. 3
Physical Education 1150 and one activity course ................................... 2
Political Science 2305, 2306 ........................................................................ 6
Life/Physical Science: select from Chemistry 1401 and Physics 1401 or higher ................................................................. 8
Laboratory Science: Geology 1401 and 1402 .......................................... 28
Social Science: select from Anthropology 1301; Economics 2300,
2305; Geography 1302, 2302; Philosophy 1301; Psychology 1302;
Sociology 2303 ....................................................................................... 3
Minor ........................................................................................................... 18

TOTAL 120

No course with a grade less than "C" can be used to fulfill Geology course requirements. Students must have a 2.0 or better grade point in each of math and science requirements.

Geology as a Minor

Recommended courses: Geology 1401, or 2404, 1402, 10 SCH 3000-4000 level courses.

Bachelor of Science

(Geology Major)

The following is a suggested sequence of courses for students seeking the Bachelor of Science with a major in Geology.

Freshman Year

Geology 1401, 1402 ...................................................................................... 8
English 1301, 1302 .................................................................................... 6
Math 1310, 1315, 1316, 1342, 2413 or higher .................................... 6-7
United States History 1301, 1302 ............................................................ 6
Physical Education 1150 and one activity course ............................. 2

TOTAL 28-29
### Sophomore Year

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<th>Course</th>
<th>Hours</th>
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<tr>
<td>Geology 3408 or Adv. Geology</td>
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<tr>
<td>Geology 2401 or Geology 3402</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 1401, Physics 1401 or higher</td>
<td>8</td>
</tr>
<tr>
<td>COMM 1303 or THEA 2304</td>
<td>3</td>
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<tr>
<td>English 2301 or other literature</td>
<td>3</td>
</tr>
<tr>
<td>English, sophomore or advanced</td>
<td>3</td>
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<tr>
<td>Social Science</td>
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**TOTAL 27 or 28**

### Junior Year

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<td>Geology 3408 or Adv. Geology</td>
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</tr>
<tr>
<td>Geology 2401 or Geology 3402</td>
<td>4</td>
</tr>
<tr>
<td>Geology 4401 or Geology 4403</td>
<td>4</td>
</tr>
<tr>
<td>Political Science 2305</td>
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<td>Geology 3 hours advanced</td>
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<tr>
<td>Electives</td>
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**TOTAL 29 or 30**

### Junior or Senior Summer

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<td>Geology 3601</td>
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**TOTAL 6**

### Senior Year

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<td>Geology 4401 or Geology 4403</td>
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<td>Geology, 3 hours advanced</td>
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<td>Multicultural requirement</td>
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<td>Fine Arts Requirement</td>
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<td>Political Science 2306</td>
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<tr>
<td>Electives</td>
<td>4-7</td>
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<tr>
<td>Minor</td>
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</tbody>
</table>

**TOTAL 29-30**

**GRAND TOTAL 120**

We offer Texas teacher certification (secondary certification). See your major advisor for details.

### UNDERGRADUATE COURSES IN GEOLOGY

**1401 Introductory Geology I (3-2)**. This course covers the nature and properties of the materials which make up the earth, the distribution of these materials throughout the earth, the processes (volcanism, glaciation, stream erosion, weathering, etc.) by which these materials are formed, altered, transported, and deformed, and the nature and development of the landscapes. (GEOL 1403)

**1402 Introductory Geology II (3-2)**. A study of the record of life forms (fauna and flora) that evolved throughout the geologic time 4.5 billion years ago up to the occurrence of man. It also covers the physical changes of the earth through 4.5 billion years of advancing and retreating seas, of deposition, and of erosion of rocks, fashioned into mountain ranges—the entire chronological history of how processes of physical geology have operated. (GEOL 1404)

Prerequisite: Geology 1401.
2401 Crystal and Optical Mineralogy (3-3). Introduction to crystallography, crystal chemistry, and optical mineralogy. Identification of minerals by physical, optical, and X-ray diffraction techniques. Prerequisite: Geology 1401, Chemistry 1401.

2404 Introduction to Environmental Geology (3-2). This course emphasizes the complex relations between the land, sea and atmosphere and human activities. Topics include: geologic hazards, land management use, water resources, hazardous waste disposal, energy and mineral resources, conservation of natural resources, and atmosphere and ocean sciences. Laboratory will consist of the study of a variety of environmental problems. This course may be used by persons seeking earth science teacher certification.

2407 Air Photo Interpretation (3-3). This course is designed for students wishing to acquire a broad overview of the surface of the earth as revealed by aerial photography. It will commence with the analysis of geological structures and progress through human interaction with the environment through natural resource management such as forestry and hydrology through agricultural activities and urban planning.

3301 Geology of West Texas (3-0). Designed to introduce the non-major to the geology of West Texas, this course contains a brief introduction to general geology followed by outlines of the geologic evolution of the region. Topics range from billion-year-old continental collisions, through deep sea deposition, coral reefs, explosive volcanism, mineral and petroleum deposits, to the evolution of the present day west Texas landscape. Optional field trips will be available. This course does not count toward advanced hours for Geology majors.

3302 Dinosaurs, Volcanoes and Earthquakes (3-0). Designed to introduce the non-major to recent developments and theories dealing with the changing face of the Earth and some of the animals that lived on it. New views on dinosaurs, their lives and their ultimate extinction. The distribution, causes, effects, and prediction of earthquakes and volcanoes. This course does not count toward advanced hours for Geology majors.

3304 Forensic Geology (3-0). The course is divided into two parts; "criminal" forensics and "civil" forensics. The first part examines such things as soil, rock, glass, etc. used in the commission of crimes. The second part looks at case studies of landslides, floods, etc. where people have sued for damages.

3401 Interdisciplinary Geographic Information Systems (2-4). This course is designed to introduce the concepts of computer-based spatial data handling, referred to as geographic information systems (GIS). The interdisciplinary approach focuses on bringing students from diverse academic backgrounds together in a team effort to learn the fundamentals of GIS, including data, sources, input, manipulation, and output presentation. It is recommended that the student have completed an introductory class in one of the following: geology, biology, natural resource management, or archaeology. Prerequisite: CS 1301, OFS 1384, equivalent or approval of instructor.

3402 Structural Geology (3-3). A study of the structural features (faults, folds, etc.), their classification, identification, occurrence, causes and geographic distribution. Prerequisite: Geology 1401, Math 1316.
3403 Advanced Geographical Information Systems (3-3). This course is designed to build on the skills learned in the Interdisciplinary GIS class. Topics will include a review of advanced vector analysis, followed by a detailed coverage of raster based analysis. Projects will include the creation and manipulation of digital elevation models, classification on aerial and satellite imagery, and vector to raster conversion and analysis. The projects and assignments will utilize an extensive Trans-Pecos spatial database housed in the Sul Ross GIS lab. Software used will include the Spatial and 3D Analyst extension for ArcGIS and ERDAS Image. Prerequisite: Geology 3401 or approval of instructor.

3408 Stratigraphy and Sedimentation (3-3). A study of the processes governing the formation and distribution of recent sediments, which established the guiding principles used in the classification, correlation and interpretation of ancient, stratified sedimentary rocks. The stratigraphic record is largely the result of the continuity of sedimentary processes through the dimension of geologic time. Prerequisite: Geology 1402.

3410 Geochemistry (3-1). A survey of the application of chemical principles to the problems of geology. Topics include the origin and distribution of the elements in igneous, metamorphic, and sedimentary rocks. Basic concepts of thermodynamics, solution chemistry, and isotope geochemistry will be discussed. Prerequisite: Chemistry 1402.

3411 Invertebrate Paleontology (3-3). The course deals with the morphology, classification, identification, evolutionary trends and geological distribution of invertebrate fossils. Laboratory work consists of systematic study of index fossils as well as representative fossils of various phyla. Prerequisite: Geology 1402 or permission of the instructor.

3412 Geomorphology (3-3). An introduction to surficial processes and landforms. Understanding the landscape upon which we live and depend can be of vital importance to nearly everyone from the homeowner to the civil engineer. Fluvial, glacial, coastal, groundwater and weathering processes will be studied along with lithologic and structural influences. Labs will include map and photo interpretation and field studies. Prerequisite: Geology 1401.

3601 Field Geology (3-6). A six weeks summer field course on the methods or techniques of geologic surveying, the nature and construction of topographic and geologic maps, measurement of stratigraphic sections and preparation of geological reports. Prerequisite: Geology 3402, 3408 or permission of the instructor.

4101 Research (1-0). Research by the student into a carefully outlined problem in the earth or geologic sciences. May be repeated for credit when topics vary.

4311 Special Topics (3-0). A course covering various topics in geology. Maybe repeated for credit when course topic varies.

4308 Tectonics (3-0). A general survey of large-scale geologic structures and their relationships on continental and global systems. Detailed study of the origin of continents, ocean basins, geoclines, and the major mountain ranges as well as discussions about the concepts of continental drift, plate tectonics and the new global tectonics. Prerequisites: GEOL 1401
4401 Sedimentary Petrology (3-3). The course concerns the laws of sedimentation, the origin, history, description, classification, and interpretation of sedimentary rocks. It also involves determination of the rock types in the source areas. Laboratory work consists of petrographic investigation of thin sections of sedimentary rock types. Prerequisite: Geology 2401, 3408.

4402 Special Problems (3-3). Individual directed readings and conference on special topics in geology. A lecture or seminar format may be used when sufficient interest exists in a topic.

4403 Igneous and Metamorphic Petrology (3-3). A study of the mode of origin, environment, evolution, characteristics and association of igneous and metamorphic rocks. Laboratory consists of hand specimen and petrographic examination of igneous and metamorphic rock suites from differing environments. Prerequisite: Geology 2401, and Chemistry 1401.

4405 Lunar and Planetary Geology (3-3). A study of the terrestrial planets and moons in which a systematic description of the planetary surfaces will be integrated with geochemical data, mineralogic data, and experimental studies in theories of the formation and evolution of terrestrial planets. Prerequisite: Geology 4403.

4412 Subsurface Geology (3-3). An examination and application of the techniques employed in subsurface geologic analysis; primarily the theory of open hole logging operations; analysis of log records, use of log records to construct various types of subsurface maps; examination of well cuttings and cores; methods of calculating water saturations, porosity and probable lithologies. Prerequisite: Geology 3408.

4414 Hydrology (3-3). A detailed, analytical, quantitative overview of the general concepts of the Hydrologic Cycle including both surface and groundwater hydrology. Discussion of the major water parameters in the cycle and their interactions. Field and lab exercises as well as lectures dealing with: precipitation; interception and water losses; evaporation; evapotranspiration; infiltration and soil moisture, groundwater movements, and aquifers; surface runoff processes and flood hazards; all as related to Water in Environmental Planning. Prerequisite: Geology 1401, Math 1310, 1315 and 1316, or equivalents.

GRADUATE PROGRAM IN GEOLOGY
(Master of Science with a Major in Geology)

The graduate program at Sul Ross emphasizes the fundamentals of geology through an integrated field and laboratory approach leading to the Master of Science degree.

ADMISSION
A. For full admission to the Graduate Program in Geology, the following are required:

1. Acceptance by the Department of Earth and Physical Sciences

2. An acceptable undergraduate academic record which includes the completion of the following or their equivalents:
   a. Math 2413 Introductory Calculus
   b. Any one of the following three courses:
1. Math 2414 Multi-Variable Calculus
2. Math 2330 Linear Algebra
3. Computer Programming Class
   c. Computer Science 1301 Introduction to Computing
   d. Chemistry 1401 or 1402
   e. Physics 1401 or 1402 or higher
   f. Geology 2401 Crystal and Optical Mineralogy
   g. Geology 3402 Structural Geology
   h. Geology 3408 Stratigraphy and Sedimentation
   i. Geology 3601 Field Geology
   j. Geology 4401 Sedimentary Petrology
   k. Geology 4403 Igneous and Metamorphic Petrology

3. Completion of the Graduate Record Examination (General) with an acceptable score.

B. Students may be conditionally admitted subject to completion of the following:
   1. Leveling work to satisfy the undergraduate requirements listed in A.2. above.
   2. Completion of the Graduate Record Exam (General) with an acceptable score during the initial semester of enrollment.

GEOLOGY GRADUATE DEGREE REQUIREMENTS

The graduate program requires the successful completion of course work with the option to complete and successfully defend a thesis.

1. Students must select at least one course from each of the following groups:
   a. 5306, 5332, 5401, 5402, 5403
   b. 5308, 5312, 5316, 5317, PHSC 4401
   c. 5320, 5322, 5326, 5328
   d. 5101

Plan 1. Thesis Option: Thirty semester credit hours of coursework in Geology, including 6 SCH of thesis (6301 and 6302), and a minimum of 24 SCH of 5000-level courses. A maximum of 6 SCH of approved graduate credit may be transferred from another accredited institution. Any transfer requires the approval of both the departmental advisor and the Dean of the College of Arts and Sciences prior to finalizing the degree plan.

Plan 2. Non-thesis Option: Completion of 36 SCH of coursework in Geology and pass an oral and a written exam. Six to eight SCH of coursework in a department other than Geology may be applied toward the degree with the approval of the graduate committee. A maximum of 8 SCH qualifying transfer courses may be counted. Any transfer requires the approval of both the departmental advisor and the Dean of the College of Arts and Sciences prior to finalizing the degree plan. Courses not counted toward the graduate degree, such as leveling courses, are noted on the transcript with an asterisk and are not calculated in the graduate grade point average.

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Note: Most of the courses below are offered on alternate years.

5101 Graduate Seminar (1-0). The course deals with modern fields of research in the geosciences. The format varies from group discussions to the presentation of oral reports. The course can be taken for credit up to a maximum of three times. At least one semester is required of all students.

5302 Special Problems. (3-0). Qualified students may pursue independent laboratory or field problems under the supervision of the staff. A project proposal is required before enrollment.

5304 Special Topics (3-0). A seminar or lecture format may be used when sufficient interest exists in a timely topic. Prerequisite: Graduate standing in geology and by arrangement with the instructor.

5306 Advanced Structural Methods (3-0). Discussion of new geophysical, paleomagnetic, and structural methods. Application of these methods in resolving large-scale structural problems to scale, applied structural problems.

5308 Advanced Igneous Petrology (3-0). A study of the origin, emplacement, and distribution of igneous rocks utilizing thermodynamics, phase equilibria, major and trace elements, and isotope geochemistry.

5312 Volcanology (3-0). Origin and emplacement of volcanic systems. Application of information obtained from modern volcanoes, experimental studies and theoretical considerations to the understanding of ancient volcanic terrains.

5316 Trace Elements in Magmatic Systems (3-0). Discussions from current literature concerning the thermodynamics of trace element distribution and the application of isotopic and trace element geochemistry to models of magma genesis and evolution. Prerequisite: Geology 3410 or 4403, Chemistry 3404 recommended.

5317 Aqueous Geochemistry (3-0). The course involves the study of the geochemistry of surface and groundwater as applied to geologic and environmental problems. Prerequisite: Geology 3410 and Chemistry 3404 recommended.

5320 Advanced Paleontology (3-0). Understanding the basic principles of evolution and ecology through the study of fossil organisms. The use of fossils in paleoenvironmental interpretations.

5322 Stratigraphic Analysis (3-0). The determination of the depositional history of segmentary rocks by the study of lithology and paleontology.

5326 Carbonate Petrology (3-0). Origin, classification and diagenesis of ancient and modern carbonate rocks and sediments.

5328 Advanced Sedimentation (3-0). Selected recent sedimentary environments and their ancient counterparts. Methods of investigation of sediments and sedimentary rocks with emphasis on terrigenous environments and rocks.

5332 Dynamic Stratigraphy (3-0). An analysis of the stratigraphic record
emphasizing the relationships between dynamic processes and facies changes in modern and ancient environments.

5333 *The Dynamic Earth (3-0).* An earth science course designed to provide the elementary and secondary teacher with modern concepts of plate tectonics, volcanism, earthquakes and other manifestations of the dynamic earth.

5401 *Remote Sensing (3-3).* A course dealing with the uses of remote sensing for geology interpretation. The lab provides practical application of a technique used in almost all fields of geology.

5402 *Interdisciplinary Geographical Information Systems (3-3).* This course is designed to introduce the concepts of computer-based spatial data handling, referred to Geographical Information systems (GIS). The interdisciplinary approach focuses on bringing students from diverse academic backgrounds together in a team effort to learn the fundamentals of GIS, including data sources, input, and analysis, and presentation of results. It is recommended that the student have completed an introductory class in one of the following: geology, biology, natural resource management, archeology, geography, or criminal justice. This graduate version of the class will require a term research project, preferably related to thesis project. Prerequisite: CS 1301, OFS 1384, equivalent, or permission of instructor.

5403 *Advanced Geographical Information Systems (3-3).* This course is designed to build on the skills learned in the Interdisciplinary GIS class. Topics will include a review of advanced vector analysis, followed by a detailed coverage of raster-based analysis. Projects will include the creation and manipulation of digital elevation models, classification on aerial and satellite imagery, and vector-to-raster conversion and analysis. The projects and assignments will utilize an extensive Trans-Pecos spatial database housed in the Sul Ross GIS lab. Software used will include the Spatial and 3D Analyst extension for ArcGIS and ERDAS Image. The graduate requirements will include a term research project related to the individual student's research interest. Prerequisite: Geology 3401, Geology 5402, or approval of instructor.

5404 *Special Topics (3-3).* A seminar or lecture format may be used when sufficient interest exists in a timely topic. Prerequisite: Graduate standing in geology and by arrangement with the instructor.

6040 *Thesis Research (0-18).* The student will enroll in this course after earning credit for GEOL 6301 each semester or summer term in which assistance is provided by committee members or when use of the library or other research facilities of Sul Ross State University is made. The course is variable for 1 to 9 credit hours, and may be repeated with approval of advisor. Credit hours earned may not be applied towards the 30 or 36 hours required for the degree. Prerequisite: Master of Science students that have been admitted to candidacy.

6301 *Thesis Proposal (0-6).* Satisfactory completion of this course requires an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the second semester of graduate study. The student will enroll each semester or summer term in which assistance is provided by Committee members or
when use of the library or other research facilities of Sul Ross State University is made.

6302 Thesis Defense (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by Committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course requires the completed thesis to be presented to the Graduate Committee, accepted by the Dean of the College of Arts and Sciences, and filed in the Office of the Provost and Vice President for Academic and Student Affairs.

PHYSICAL SCIENCE

PSYS 1415 Physical Science (3-2). Survey course to prepare education majors to teach physical science topics (physics, chemistry, astronomy, and geology) in grades K-5.

UNDERGRADUATE COURSES IN PHYSICS

Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.

1401 General Physics I (3-2). Non-calculus based survey course in general physics covering kinematics, dynamics, temperature, heat, thermal properties of matter, and wave phenomena. Emphasis is placed upon the concepts of physics rather than mathematical relationships. (PHYS 1401) Prerequisite: Math 1315 or a satisfactory score on the algebra placement test.

1402 General Physics II (3-2). Continuation of Physics 1401. This non-calculus based survey course in general physics covers electricity, magnetism, electromagnetic waves, optics, atomic and nuclear physics, special relativity, and quantum chromo dynamics. Emphasis is placed on the concepts of physics rather than mathematical relationships. (PHYS 1402) Prerequisite: Physics 1401.

1415 Physical Science (3-2). Survey course to prepare elementary education majors to teach physical science topics (physics, chemistry, astronomy, and geology) in grades K-5.

2401 Calculus-Based Physics I (3-2). General physics for students who plan to do further work in engineering, mathematics, chemistry, geology or other related sciences. The course covers vectors, statistics, linear and rotational kinematics and dynamics and wave phenomena. (PHYS 2425) Prerequisites: Math 1316 and Math 2413.

2402 Calculus-Based Physics II (3-2). Continuation of Physics 2401 covering kinetic theory, thermal properties of matter, thermodynamics, electrostatic fields, potential, electric circuits, and magnetic fields. (PHYS 2426) Prerequisites: Physics 2401 and Math 2414.
ENVIRONMENTAL STUDIES

College of Arts and Sciences
College of Agricultural and Natural Resource Sciences
E-mail: arts-sciences@sulross.edu
E-mail: anrs@sulross.edu

Minor Description
Environmental Studies is an interdisciplinary minor that encourages students to delve into the problems and prospects of the environment. The environmental studies minor allows students to gain fundamental knowledge of science as well as literature and the law. This basic competency establishes a comprehensive context for understanding the methodologies and problems of studying environmental issues. The areas to be selected from include Biology, Chemistry, Geology, Humanities and Social Sciences, and Natural Resource Management. This concentration provides depth of knowledge with advanced analytical skills and serves as preparation for graduate study or varied forms of employment in environmental work.

Environmental Studies as a Minor:
A minor in Environmental Studies may be obtained by taking a minimum of eighteen semester credit hours. Students are required to take three courses from the following list of core classes: Biology 2407; Chemistry 2409; English 2315; Geology 2404; Geology 3401; Natural Resource Management 4301; Political Science 2304. Students must take two or more advanced courses (at least 6 SCH) in Environmental Studies sufficient to bring their total semester credit hours to at least eighteen.
DEPARTMENT OF
FINE ARTS AND COMMUNICATION
(including Art, Communication, Journalism, Music and Theatre)

Department of Fine Arts and Communication
College of Arts and Sciences
Office: Fine Arts Building 106
Phone: (432) 837-8218
E-mail: erumsey@sulross.edu

Professor and Chair: Esther L. Rumsey, Ph.D.

Professors: Carol H. Fairlie, M. F. A., Donald C. Freed, Ph.D.,

Assistant Professors: Avram Dumitrescu, M.A.A., Bret Scott, M.F.A.,
and Joseph G. Velasco, Ph.D.

Instructor: Christopher Dobbins, M.M.

Program Description
The Department of Fine Arts and Communication, comprising the academic
disciplines of art, communication, journalism, music and theatre, offers the
following degrees and teacher certifications:

Bachelor of Arts: Communication
Bachelor of Fine Arts: Visual and Performing Arts
Teacher Certification: Art, Communication, Music, Theatre

In addition, minors are offered in each of the four areas and in photography
and journalism. Undergraduate course work is offered in each of the four
areas, Journalism and Fine Arts; graduate course work is offered in Art,
Communication, Music, and Theatre.

The Department of Fine Arts and Communication, which firmly supports Sul
Ross State University's "student-centered campus" philosophy, offers students invaluable "hands-on" training and opportunities through its various
courses and activities. Through their all-encompassing curricula, the
programs in art, communication, music, and theatre prepare their students
for the graduate and/or professional world: as educators, as artists, as
performers, as technicians, etc.

The Department serves as one of the primary cultural centers for the Big
Bend region of West Texas. Therefore, the Department's four programs offer
a broad range of creative activities, including student and professional art
shows, vocal and instrumental concerts, television, film and radio
productions, year-round theatrical productions, and radio theatre.

All students are eligible to join the eight honorary societies, and clubs that
are sponsored by the Department of Fine Arts and Communication.

Honorary societies include Lambda Pi Eta (the national communication
honorary society), Alpha Psi Omega (the national theatre honorary society),
and Kappa Pi (the national art honorary society). Student organizations
include the Art Club (for students whose interests lie in the visual arts), the
Music Club (for students who wish to promote the activities of the Music
Program), the Sul Ross Theatrical Society (for all students interested in theatre arts), and the Video Club (for students interested in producing independent video/film projects).

**Career Opportunities**

**Art**
- Artist Educator
- Art Critic
- Gallery Owner/Operator
- Photographer
- Printmaker
- Jeweler
- Production Potter
- Craftsperson
- Therapist
- Digital Art Librarian
- Movie Set Designer
- Movie Set Production Artist
- Museum Curator
- Layout Artist
- Corporation Artist

**Music**
- Educator
- Private Instructor
- Performer
- Music Publishing
- Music Retailing Management
- Administrator in Music and Arts
- Music Technology
- Music Therapy
- Church Music
- Military Service Music

**Theatre**
- Educator
- Actor
- Entertainer
- Director
- Designer
- Theatre Technician
- Broadcaster
- Community Theatre Director
- Stage Manager
- Playwright
- Screen writer
- Game Design Writer
- Theatre Administrator
- Public Information Officer
- Training Specialist
- Grant Writer
- Customer Service
- Human Relations Director
- Customer Service Specialist

**Communication**
- Advertising
- Educator
- Electronic Media
- Web Page Designer
- Radio Broadcasting
- Television Broadcasting
- Non-Broadcast Video Production
- Print Journalism
- Electronic Journalism
- Public Relations
- Front of House Manager
- Promoter
- Marketing Communication-Mng.
- Public Relations
- Sales Representative

**Features**
The Department of Fine Arts is located in the Francois Fine Arts Building, with the main office and the chair’s office in FAB 106. Departmental facilities located in the Fine Arts Building include the band hall (FAB 100), the art gallery (FAB 102), the costume shop (FAB104), the Studio Theatre (FAB105), the choir room (FAB 200), the television production studio (FAB 205), the radio station and production room (FAB 206), as well as several classrooms, music practice rooms, and faculty offices. Additionally, the Department has a scene shop, located at the Kokernot Outdoor Theatre, and a ceramics and sculpture annex, located to the east of the Industrial Technology Building. Sul Ross State University has four performing spaces: Marshall Auditorium (a 700 seat proscenium facility), the Studio Theatre (a 120 seat proscenium facility), the Kokernot Outdoor Theatre (a 200 seat modified, outdoor proscenium theatre) and the Kokernot Amphitheatre (a 100+ seat natural amphitheatre). State-of-the-art lighting, sound and rigging
have recently been installed in Marshall Auditorium and the Studio Theatre. The Kokernot Outdoor Theatre and Amphitheatre have been designated by the Texas Commission on the Arts as part of Alpine’s State Cultural District.

Scholarships

Alpine Gallery Night Scholarship
One $500 Scholarship for a full-time undergraduate majoring in Art; Deadline is March 1 of each year. Contact Art Program for further details.

Henry Bertrand Jr. Memorial Scholarship
Two $2,000 Scholarships; one Scholarship to be awarded to a sophomore, junior or senior in each of the following majors: Communication and Theatre. Recipients must have a cumulative grade point average of 3.0. Preference is to be given to students seeking self-improvement through communication, public speaking, vocabulary development, development of extemporaneous speaking abilities and toastmaster skills, and development of the ability to express oneself completely, confidently and with a sense of humor.

Wade "Bubba" Carroll Scholarship
One $500-750 scholarship for a full-time theatre student who is in good academic and disciplinary standing, and is active in SRSU theatre productions. Contact the Theatre Program for further details.

Dan Blocker/Freda Powell Scholarships in Theatre
Six to 20 $1,000 scholarships for students who are in good academic and disciplinary standing and are active in SRSU theatre productions. Preference is given to students who major or minor in theatre. Deadline is prior to each semester. Contact the Theatre Program for further details.

Elizabeth Keefer Boatright Scholarship
One or two $200-400 Scholarship(s) for art majors, who have a minimum of a 2.75 college cumulative grade point average and a 3.0 cumulative grade point average in art. Applicants must submit a portfolio of their work for consideration. Contact the Art Program for further details.

Richard D. Bryan Memorial Scholarship
One to four $200-500 need-based Scholarship(s) for music majors who are in good academic and disciplinary standing. Preference is given to students seeking all-level or secondary teacher certification with a music major or minor. Additional preference is given to students whose principal area of study is band. Contact the Music Program for further details.

Grace M. Davis Drama Fund Scholarship
One $1,000 – 2,000 scholarship for the outstanding theatre major who is in good academic and disciplinary standing

Laura A. Eaves Scholarship
One $200 Scholarship for a full-time student majoring in Art. Contact Art Program for further details.

Paul and Teeby Forchheimer Communication Scholarship
One to three $200-400 Scholarships for undergraduate communication majors, who are in good academic and disciplinary standing. Deadline is prior to each semester. Contact the Communication Program for further details.
Sarah Miltia Hill Scholarship
One $200 Scholarship for art majors, who have a minimum of a 3.0 cumulative grade point average. Preference is given to art majors seeking teacher certification. Contact the Art Program for further details.

Music Activity Award
10 to 50 $50-200 awards for students, who are in good academic and disciplinary standing, demonstrate ability and participate in a music ensemble. Deadline is prior to fall and spring semesters. Contact the Music Program for further details.

Music Scholarship
Ten to twenty $1,000 Scholarships for undergraduate music major who are in good academic and disciplinary standing. Deadline is prior to each semester. Contact the Music Program for further detail.

Mary E. Thain Memorial Art Endowment
One $400 Scholarship for undergraduate or graduate Art major with a 2.5 cumulative grade point average and a 3.0 cumulative grade point average in Art. Contact Art Program for further details.

Mary Jane Micou Wade and Charles E. Wade Scholarship
One or two $200-500 Scholarship(s) for music majors, who have a minimum of a 3.0 cumulative grade point average and must participate in the SRSU Band Program. Preference is given to students seeking all-level teacher certification with music major or minor. Contact the Music Program for further details.

ART
Sul Ross State University is located in an area which has served as a source of inspiration for many famous artists as diverse as the minimalist/conceptual sculptor Donald Judd and painter Georgia O'Keeffe. The natural beauty of the land, its historic associations, and an incredible sense of open space found here are strong attractions for creative individuals. Studio art classes are small and friendly. Students work closely with their instructors. Continuous art exhibitions are held in both the Francois Gallery in the Fine Arts building and the Museum of the Big Bend located on campus. In addition, the Wildenthal Library, with a significant collection of art books and other visual aids, provides art students with excellent support resources.

Bachelor of Fine Arts
(Art Major 121 hours)

Core Curriculum
Basic Skills Component ............................................................................................46
English 1301 and 1302 ............................................................................................6
Mathematics, select from 1310, 1315, 1316, 1342, or 2413 ...........................3
Communication, select from Comm 1303 or Thea 2304 .................................3
Basic General Knowledge
FA2301 Computer Design ..................................................................................3
Kinesiology, PE 1150 and one activity course .................................................2
Literature 2301 ........................................................................................................3
Laboratory Science, select two from Astr 1401 or 1402, Biol 1401 or 1402, Chem 1401 or 1402, Geol 1401, 1402 or 2402, Phys 1401, 1402, 2401 or 2402 .................................................................................................8
Social Science, select from Anth 1301, Eco 2300 or 2305, Geog 1301 or 1302, Phil 1301, Psy 1302, or Soc 2303..................................................3

**Integrity, Tolerance, Ethical Values, and Citizenship**
American History, select two from Hist 1301, 1302, or 3309........................................3
State Government, PS 2306 .........................................................3
Federal Government, PS 2305..........................................................3
Multicultural select Art History (from 3307 Women in Art, 3313 European Art & arch., 3314 Latin American Art History, Visual Culture of the Middle East) *** ..................................................3

**General Education** ......................................................................9
English, select one 2000 or higher course .............................................3
Computer Science, Comm 2308, FA 2301, or journalism ..........................3

**Major** .........................................................................................60
Art, 1302, 1303, 1304, 1306, 2301, 2302, 2303, 2305, 2306, 2309, 3302, 3306, 3310, and 3326..................................................42
plus 12 SCH advanced in area of specialization (4301) ........................................12

**Electives** ......................................................................................6

Total 121

*A senior exhibition or research project is required for all graduating Art majors. A competency review of all art work passed must be taken before enrolling in the 4301 senior advanced studio. All graduating Art majors are required to submit a slide digital portfolio to be reviewed during their final year. Students may be asked to leave an example of their work for inclusion in the permanent collection of the Art Program.

**ART AS A MINOR**
To minor in Art, a student must consult with an Art Program advisor to help coordinate the classes to take. An Art minor must complete 18 hours in art including Art 1302 (Drawing I), Art 1303 (Design I), Art 3304 or 3305 (Art History), a two-dimensional class; either Art 2301 (Painting), or Art 2302 (Watercolor), a three-dimensional class; either Art 2305 (Ceramics) or Art 2309 (Sculpture), plus three (3) hours of an advanced studio.

**PHOTOGRAPHY AS A MINOR**
A Photography Minor must complete 18 semester credit hours, including six (6) advanced semester credit hours. Students must take Art 1303 (Design I), IT 2304 (Photography), and IT 3354 (Studio Photography). Student must take two or more advanced courses (at least 6 semester credit hours) in Photography sufficient to bring their total semester credit hours to at least eighteen.

**Bachelor of Fine Arts**
**Option I - All-Level Teaching Field**
Required Education Courses: ED3300, 3301, 3302, 4312, 4314, 4317, 4603.
Art: Art 1302, 1303, 1304, 1306, 2301, 2302, 2305, 2309, 3302, 3303, 6 SCH from 3304, 3305, or 3308, 3309, 3315, 3326, 4301

**Bachelor of Fine Arts (Art Major)**
Areas of specialization: Ceramics, Painting, Drawing, Mixed media,
The following is a suggested sequence of matriculation for students seeking a Bachelor of Fine Arts degree with a major in Studio Art or Art History.

**Freshman Year**
- Art-Drawing 1 and 2: 1302 and 1306 ........................................6
- Art-Design 1 and 2: 1303, 1304 or 2303 ................................6
- Art History 1307, 1308 ......................................................6
- Communication 1303 or Theatre 2304 .................................3
- English 1301, 1302 ................................................................6
- Physical Education 1150 and one activity course .................2
- Social Science .......................................................................3
- Math1310 or above ..............................................................3

**TOTAL 35**

**Sophomore Year**
- Art-Ceramics 1: 2305, ..........................................................3
- Art-Painting: 2301, or 2302 ..................................................6
- Art Design 1303, 1304, or 2303 ..........................................3
- Art – Drawing II 1303 or 3311 .............................................3
- Computer Requirement .........................................................3
- English 2301 or other literature ...........................................6
- Fine Arts Requirement ..........................................................3
- United States History ...........................................................6
- Fine Arts 2301 Computer design ...........................................3
- Political Science 2305, 2306 ..................................................6

**TOTAL 39**

**Junior Year**
- Art-Ceramics 2: 2306 ............................................................3
- Art-Painting: 2301 or 2302 ...................................................3
- Art-Sculpture 2309 ...............................................................3
- *Art-Printmaking 3302 .........................................................3
- Art-Advanced Studio 3301 ....................................................3
- Contemporary Art History 3308 ...........................................3
- Art-Jewelry 3326 .................................................................3
- Art-Area of Specialization 4301 ..........................................3
- Laboratory Science ..............................................................8
- Electives .............................................................................3

**TOTAL 32**

**Senior Year**
- Art-Seminar in Art 3306 .........................................................3
- Art-Special Topics 3310 ........................................................3
- Art-Area of Specialization 4301 ..........................................3
- Art-Exhibition Capstone Project 4301 ..................................3
- Multicultural Art History .....................................................3
- Electives 3000 level or above ..............................................3

**TOTAL 27**

GRAND TOTAL 121-122

A full summer session is recommended immediately proceeding and following the sophomore year to reduce the heavy maximum loads during
the junior and senior years.

A 3000 level proficiency review must be passed before entering into the 4301 studio art concentration.

*These classes may be offered every other year.

**No course with a grade less than the “C” can be used to fulfill art major course requirements.**

**UNDERGRADUATE COURSES IN ART**

* A visiting artist workshop is offered under these numbers during some summer terms.

Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.

1301 *Introduction to the Visual Arts* (3-0). An introductory course leading to an understanding of the Visual Arts. (ARTS 1301)

1302 *Drawing I* (2-4). An introduction to drawing fundamentals with stress upon observations and techniques involving various drawing media. (ARTS 1316)

1303 *Design I* (2-4). An introduction to the fundamentals of two-dimensional design. (ARTS 1311)

1304 *Design II* (2-4). Three-dimensional design and color theory. (May be taken before Design I) (ARTS 1312)

1306 *Drawing II* (2-4). Continuation of drawing skills and techniques as begun in Drawing I (1302) with emphasis on compositional skills. Prerequisite: Art 1302 or permission of instructor.

1307 *Art and Architecture of the Western World I* (3-0). A survey of the art and architecture of the Western World from prehistoric times through the Gothic Period. Qualifies for general education credit.

1308 *Art and Architecture of the Western World II* (3-0). A survey of the art and architecture of the Western World from the Early Renaissance to the contemporary period. Qualifies for general education credit.

2301 *Painting I* (2-4). Exploring opaque painting media (oil or acrylic) with emphasis on color and composition. (ARTS 2316)

2302 *Watercolor* (2-4). Exploring transparent painting media (watercolor or tempera) with emphasis on methods and techniques.

2303 *Graphic Design* (2-4). An introduction to the basic processes and techniques of advertising art.

2304 *Independent Study in Art* (2-4). Independent investigation into an art subject area: i.e. in only one area such as painting, drawing, sculpture, design, ceramics, printmaking, jewelry, fibers or art education. May be repeated for different subject areas.

2305 *Ceramics I* (2-4). An introduction to basic ceramic processes, including
wheel throwing, hand building, glazing and firing. (ARTS 2346)

2306 Ceramics II (2-4). A further exploration of intermediate ceramic processes, including wheel throwing, glazing and kiln firing. (ARTS 2347) Prerequisite: Art 2305 or permission of instructor.

2309 Sculpture (2-4). Exploratory studies in the principles, materials, and techniques of sculpture. (ARTS 2326)

2311 Alternative Methods of Photography (2-4). A survey of nontraditional photographic printing process such as Van Dyke Brown, Cyanotype, Solarization and Texture Screens. Prerequisite: IT 2304.

2301 Art Studio Concentration I (2-4). First level of advanced investigation into a studio art subject area; i.e., drawing and painting, ceramics, sculpture, printmaking, and in exceptional cases, art education or design and advertising art. The course may be repeated for credit up to three times in an area of specialization. Student will need to discuss their artistic background with the instructor.

3302 Printmaking (2-4). An introduction to the basic printmaking processes including collagraphic, intaglio, stencil, and relief.

3303 Art Theory I and Practice for Children (2-2). (Elementary Art Theory). A survey and analysis of the theories and practices of teaching art to children. Topics include artistic development, art programming content, philosophies, methodologies, objectives and assessment.

3306 Seminar in Art (3-0). A discussion of subjects such as resume and portfolio development, art careers, art marketing and sales, and other areas which are of interest and importance to all art students. (Required for art majors—preferably taken in junior year.)

3307 Women in Art (3-0). Art history class tracing the overlooked area of women in art.

3308 Contemporary Art History (3-0). A survey of painting, sculpture, architecture, and other arts from Post-Impressionist to Contemporary Period.

3309 Crafts (2-2). An introduction to art theories and methods governing the teaching of craft activities in the classroom. Required for Art Education majors.

3310 Special Topics (3-0). Topics to be selected from history and literature of art, art in the general culture, techniques of teaching art in the public Schools, or other topics in the field of art. (May be repeated for credit when topic varies.)

3311 Life Drawing (3-2). Advanced drawing class that involves drawing fundamentals in relationship to the human form with stress on observation and human anatomy. May be taken for up to nine hours of credit. Each semester of work is progressively more advanced than the previous semester. Prerequisites: Art 1302 or the permission of the instructor.

3312 Rock Art (1-3). Art history class tracing the indigenous art of American Indians in this area.

3313 European Art and Architecture (3-0). A "hands-on" investigation of the
artistic and architectural styles and historically significant works of art in European cultures. The course meets the multicultural requirements.

3314 Latin American Art Survey (3-0). A survey of painting, sculpture, architecture and other arts from pre-Columbian times through the present day of Latin America.

3315 Art Theory II and Practice for Adolescents (2-2). A survey of advanced methods related to the understanding of aesthetic achievement in the secondary art programs. This course required for art education majors. The theories and practice of adolescent art learning. Topics include learning environment, artistic development, presentation methodologies, objectives, assessments and other current topics.

3316 Extruded Ceramics (3-3). An exploration to the use of the ceramic extruder as a ceramic design tool. Students will learn to make and use dies to create ceramic extrusions to be used as design elements in finished work. Prerequisite: Ceramics I or permission of the instructor.

3317 Handmade Ceramic Tile (3-3). An exploration in the designing, making and decorating of handmade ceramic tile. Students will design and create tiles using the slab method as well as the hand pressed method to create a body of original tile that can be used in table tops, counter tops or any other tile application. Prerequisite: Ceramics I, Design I or permission of the instructor.

3318 Pinhole Photography (2-4). An introduction to the pinhole photography experience through artistic means. Students will design and build a pinhole camera and create a portfolio of finished pinhole photographs.

3319 Photography: Specific Topics (2-4). A course dealing with topics in the study of photography such as darkroom, techniques, printing processes, and photographic processes. May be repeated when topics vary. Prerequisite: IT 2304.

3320 Ancient and Medieval Art (3-0). A survey of the art and architecture of the Ancient and/or Medieval periods. This course may focus on a particular subject or topic of an Ancient or Medieval art, including but not limited to Ancient Near Eastern, Egyptian, Greco-Roman, Early Christian, Byzantine, Islamic, Romanesque or Gothic Art. May be repeated for credit as the topic varies.

3321 Renaissance Art (3-0). A survey of the art and architecture of the Renaissance. This course may focus on a particular subject or topic of Renaissance Art, including, but not limited to, Early Renaissance, Italian Renaissance and Northern Renaissance Art. May be repeated for credit as the topic varies.

3322 Baroque Art (3-0). A survey of the art and architecture of the Baroque Period. This course may focus on a particular subject or topic of Baroque Art, including, but not limited to Spanish, French, Italian and Dutch Baroque Art. May be repeated for credit as the topic varies.

3323 18th and 19th Century Art (3-0). A survey of the art and architecture of the 18th and 19th centuries. This course may focus on a particular subject or topic of art of the 18th and 19th centuries, including but not limited to, the Rococo, Neoclassicism, the Art of the Academy, Romanticism, French Realism and Impressionism. May be repeated for credit as the topic varies.
3326 Jewelry (1-4). Basic techniques in working with the process for creating jewelry, hollowware, and small sculpture.

4301 Advanced Studio Concentration I (2-4)*. Advanced studio art specialization in subject area; i.e., drawing and painting, ceramics, sculpture, printmaking, and in exceptional cases, art education or design and advertising art. These classes develop formal competence in the technical mastery of materials. Comprehensive compositional and formal skills, expressive characteristics in the visualization of ideas and innovative formal considerations. Prerequisite: Art 3301.

4302 Advanced Studio Concentration II (2-4). Advanced investigation into a studio art subject area; i.e., drawing and painting, ceramics, sculpture, printmaking, and in exceptional cases, art education or design and advertising art. These classes develop formal competence in the technical mastery of materials, comprehensive compositional and formal skills, expressive characteristics in the visualization of ideas and innovative formal considerations. A formal proposal for the development of a senior capstone exhibition is developed in this class before the student enters exhibition. The course may be repeated for credit two times in an area of specialization. Prerequisite: Art 4301 and written proposal.

GRADUATE COURSES IN ART

5301 Curriculum Enrichment (1-4). Seminar in the problems unique to university teaching problems. Students meet as a group to do peer review and professional practices and also work independently with a selected instructor in a class specific to their discipline. Prerequisite: must have passed undergraduate class in same area of specialization or permission of instructor.

5303 Individual Research Problems (1-4). Designed for students who are prepared to do research within a visual arts specialization area. The course may be repeated for credit up to four times with number designate for area of specialization. Prerequisites: must have passed upper level undergraduate class in the same area of specialization.

5304 Graduate Art Studio I (2-4). Designed for students who are prepared to do work in any visual arts areas of specialization. The course may be repeated for credit up to four times with letter number designate for area of specialization. Prerequisite: Must have passed upper level class in same area of specialization.

5306 Art History (3-0). Study of the visual arts of the world. The course may be repeated for credit where topic varies.

5307 Contemporary Art History (3-0). A survey of the visual arts of the world with emphasis on the development of architecture, sculpture, painting and the minor arts in the Twentieth Century.

6301 Thesis Proposal (0-6). Satisfactory completion of this class will result in an acceptable proposal for an art research thesis presented to the graduate committee. A student will normally register for this course after the second semester of graduate work in art history. The student should only enroll in this class when the committee members are available to work with them and
the library or other research facilities are available for their use.

6302 Thesis Defense (0-6). The student will enroll in this course each semester or summer term when the committee members are available to work with them and the library or other research facilities are available for their use. Satisfactory completion of this course will result in the completed thesis presented to the committee, accepted by the Dean of the College of Arts and Sciences and filed in the office of the Provost and Vice President for Academic and Student Affairs.

COMMUNICATION

The humanistic study and practice of human communication—whether applied to individuals relating to them or others, family units, public forums, or media forms—provides the fundamental basis for understanding our ways of thinking, knowing, and relating to each other through the symbols we share. Analysis of the ways in which symbols are created, upheld, or destroyed provides us with the means to enhance, maintain, or demean the human condition. While the choice ultimately resides within each individual, our approach to the study and practice of human communication is rooted in the belief that enhancement of the human condition is a distinctively humanistic act—one in which all mankind should participate.

The B.A. degree is offered in Communication, with specialized focuses in Human Communication or Mass Communication. Journalism courses may be applied to the non-teacher certification communication major or minor with permission of communication advisor. Secondary Teacher certification is offered in communication.

A human communication focus provides a theoretical and practical understanding of human interaction, including traditional speech communication (i.e., public speaking, debate and small group) as well as social science areas of communication (i.e., family communication, gender communication and interpersonal communication). Course work includes communication theory and research as well as development of effective communication skills. A degree in human communication gives students tremendous flexibility in terms of career choices because effective communication is widely recognized as vital to such fields as advertising, public relations, international relations, health and human services, law, and government.

A mass communication focus provides a strong understanding of mass communication, encompassing the broadcast industry, new media and basics of public relations and advertising. Students study both theoretical principles and technical application of those principles. Course work includes all aspects of audio and video production applying a variety of approaches. Majors are expected to learn how the various fields in mass communication are structured and function, and to understand how the media are converging and the consequences of that convergence. The broad based approach to mass media studies (mass communication education) prepares students for current employment and opportunities created by developing technologies. Students who complete the Mass Communication focus will have many career options, especially in the broadly defined fields of journalism, radio, television, new media, advertising, strategic public relations, and integrated communications.
The communication program sponsors LISN (the Lobo Information and Sports Network comprised of KSRU Radio and KSRU TV); and Lambda Pi Eta (National Communication Honor Society).

Facilities for KSRU Radio and KSRU TV include a live video studio, a radio control room, digital video editors, PC digital audio editors, and field video equipment in VHS, S-VHS, MiniDV and DVCAM formats. The Sul Ross State University Campus Radio, along with the Theatre Program, the Communication Program produces live radio theatre through the Sul Ross Radio Theatre Project. KSRU-TV (Cable Channel 12) students produce various campus, educational, and informational projects throughout the year. Courses in electronic media and participation in media activities and projects are open to all Sul Ross students.

The University is a member of the National Communication Association, the National Association of College Broadcasters, and the Texas State Communication Association.

Oral Communication Requirement: Communication 1303 is the course normally taken to satisfy this requirement. Courses which may also fulfill the requirement and which may be taken with approval of the student's academic advisor are: Communication 3306, and Theatre 2304.

Bachelor of Arts
(Communication Major with Human Communication Focus- 120 hours)

Core Curriculum

<table>
<thead>
<tr>
<th>Basic Skills Component</th>
<th>46</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1301 and 1302</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics, select from 1310, 1315, 1316, 1342 or 2413</td>
<td>3</td>
</tr>
<tr>
<td>Communication, Comm 1303</td>
<td>3</td>
</tr>
</tbody>
</table>

Basic General Knowledge

<table>
<thead>
<tr>
<th>Fine Arts, select from FA 1301, Art 1301, Music 1312 or 1313 or Thea 1302</th>
<th>3</th>
</tr>
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<tbody>
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<td>Kinesiology, PE 1150 and one activity class</td>
<td>2</td>
</tr>
<tr>
<td>Literature, Eng 2301 or other literature</td>
<td>3</td>
</tr>
<tr>
<td>Laboratory Science, select two from Astr 1401 or 1402, Biol 1401 or 1402, Chem 1401 or 1402, Geol 1401, 1402, or 2402, Phy 1401, 1402, 2401 or 2402</td>
<td>3</td>
</tr>
<tr>
<td>Social Science, select from Anth 1301, Eco 2300 or 2305, Geog 1301 or 1302, Phil 1301, Psy 1302 or Soc 2303</td>
<td>3</td>
</tr>
</tbody>
</table>

Integrity, Tolerance, Ethical Values and Citizenship

| American History, select two from Hist 1301, 1302, or 3309 | 6 |
| State Government, PS 2306 | 3 |
| Federal Government, PS 2305 | 3 |
| Multicultural, select from Hist 2301 or 23023 MAS 2301, PS 2307 or WS 2301 | 3 |

General Education

| English, Eng 2304 | 3 |
| Fine Arts, select one from Thea 2303 or 2304 | 3 |
| Foreign Language, two courses in one language | 6-8 |

Major

| Communication Core: 2305; 2308; 3306; 4310 | 12 |
| Human Communication Focus: 2303, 3304, 4301, 4302 | |
| Either 3309 or 4305; either 3311 or 4307; plus 6 SCH advanced selected from: 3305, 3307, 4304 or 4306 | 24 |
Bachelor of Arts
(Communication Major with Mass Communication Focus - 120 hours)

Core Curriculum

Basic Skills Component ..............................................................46
English 1301 and 1302 .................................................................6
Mathematics, select from 1310, 1315, 1316, 1342 or 2413 ............ 3
Communication, Comm 1303.........................................................3

Basic General Knowledge
Fine Arts, select from FA 1301, Art 1301,
    Music 1312 or 1313 or Thea 1302.........................................3
Kinesiology, PE 1150 and one activity class ................................2
Literature, Eng 2301 or other literature ................................. 3
Laboratory Science, select two from Astr 1401 or 1402
    Biol 1401 or 1402, Chem 1401 or 1402,
    Geol 1401, 1402, or 2402, Phy 1401, 1402, 2401 or 2402 ..........3
Social Science, select from Anth 1301, Eco 2300 or 2305
    Geog 1301 or 1302, Phil 1301, Psy 1302 or Soc 2303 ..........3

Integrity, Tolerance, Ethical Values and Citizenship
American History, select two from Hist 1301, 1302 or 3309 .............6
State Government, PS 2306 .......................................................3
Federal Government, PS 2305 ....................................................3
Multicultural, select from Hist 2301 or 2302
    MAS 2301, PS 2307 or WS 2301 ..................................3

General Education ................................................................... 9-11
Fine Arts, select one from Thea 2303 or 2304 ............................3
Foreign Language, two courses in one language ..........................6-8

Major ...................................................................................... 36
Communication Core: 2305; 2308; 3306; 4310 ...............................12
Mass Communication Focus: 1304, 2306, 2307, 3305

Either 3304 or 4301; either 3311 or 4307; plus
3 SCH advanced selected from: 3302, 3303,
    3307, 3308, 4304, or 4306 ..................................................21
Journalism 2301 .................................................................3

Minor (at least 6 hours advanced) .................................................. 18
Electives (at least 3 hours advanced) ............................................ 9-11

Total 120

Bachelor of Arts
(Communication Major with Secondary Teacher Certification)

Speech Communication (36 semester credit hours): COMM 1303, 1304,
2303, 2304, 2305, 2308, 3304, 3305, 3306, 3309 or 4305, 3311 or 4307,
4301, 4302, 4310.

Communication as a Second Teaching Area (minor) Speech Communication
(24 semester credit hours): COMM 1303, 1304, 2305, 3304, 3305, 4310

Communication as a Minor
18 semester credit hours of coursework to include 1303, 2305, 3306; 3304
    or 4301; plus additional 6 semester credit hours.
Bachelor of Arts
(Communication Major - Mass Communication Focus)

The following is a suggested sequence of courses for students seeking the Bachelor of Arts Degree with a major in Communication - focusing in Mass Communication. Since many communication courses are offered every other year, Schedule adjustments may be necessary.

First Year
Communication 1303*, 1304, 2306 or 2307 ........................................... 9
English 1301, 1302 ............................................................................. 6
History 1301, 1302 ............................................................................. 6
Physical Education 1150 and one activity course ............................... 2
Spanish 1401, 1402 ............................................................................. 8
Theatre 2304** .................................................................................... 3

TOTAL 31

Second Year
Communication 2305, 2306 or 2307, 2308 ........................................... 9
English 2301 or other literature .......................................................... 6
History 1302 ....................................................................................... 3
Mathematics ....................................................................................... 3
Laboratory Science .......................................................................... 4
Political Science 2305, 2306 ................................................................. 6
Theatre 2304** .................................................................................... 3

TOTAL 31

Third Year
Communication 3304 or 4301, 3305, 3306 ........................................... 9
Journalism 2301 English 2304 ............................................................. 3
Laboratory Science .......................................................................... 4
Minor ................................................................................................. 12
Social Science 2301, 2302 ................................................................. 3

TOTAL 31

Fourth Year
Communication 3305, 3311*** or 4307***, 4310 .................................. 9
Communication, Advanced ............................................................... 3
Minor, Advanced .............................................................................. 6
Electives ............................................................................................ 9

TOTAL 27

GRAND TOTAL 120

*Meets Oral Communication requirement.
** Meets 3 SCH of Fine Arts requirement.
***Meets Multicultural Social Science requirement.
****Meets Computer Science competency requirement.

(Communication Major - Human Communication Focus)

The following is a suggested sequence of courses for students seeking the Bachelor of Arts Degree with a major in Communication - focusing in Human Communication. Since many communication courses are offered every other year, Schedule adjustments may be necessary.

First Year

Hours
<table>
<thead>
<tr>
<th>Subject</th>
<th>Courses</th>
<th>SCH</th>
</tr>
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<tbody>
<tr>
<td>Communication</td>
<td>1303*, 2303, 2305</td>
<td>6</td>
</tr>
<tr>
<td>English</td>
<td>1301, 1302</td>
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</tr>
<tr>
<td>History</td>
<td>1301, 1302</td>
<td>6</td>
</tr>
<tr>
<td>Laboratory Science</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1150 and one activity course</td>
<td>2</td>
</tr>
<tr>
<td>Theatre</td>
<td>2304**</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>2303, 2305, 2308****, 3306</td>
<td>9</td>
</tr>
<tr>
<td>English</td>
<td>2301 or other literature</td>
<td>3</td>
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<td>Fine Art</td>
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<td>3</td>
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<td>Foreign Language</td>
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<td>3</td>
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<tr>
<td>Mathematics</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Political Science</td>
<td>2301, 2302</td>
<td>6</td>
</tr>
<tr>
<td>Theatre</td>
<td>2304**</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>31</td>
</tr>
<tr>
<td><strong>Third Year</strong></td>
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</tr>
<tr>
<td>Communication</td>
<td>3304, 3311*** or 4307***, 3309 or 4305</td>
<td>9</td>
</tr>
<tr>
<td>English</td>
<td>2304 or Jour 2301</td>
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</tr>
<tr>
<td>Laboratory Science</td>
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<td>4</td>
</tr>
<tr>
<td>Minor</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Social Science</td>
<td>2301, 2302</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>31</td>
</tr>
<tr>
<td><strong>Fourth Year</strong></td>
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<td></td>
</tr>
<tr>
<td>Communication</td>
<td>4301, 4302, 4310</td>
<td>69</td>
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<tr>
<td>Communication, Advanced</td>
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<td>63</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td>69</td>
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<tr>
<td><strong>Fourth Year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor, Advanced</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>13</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td>31</td>
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<tr>
<td><strong>GRAND TOTAL</strong></td>
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<td>120</td>
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</tbody>
</table>

*Meets Oral Communication requirement.
** Meets 3 SCH of Fine Arts requirement.
***Meets Multicultural Social Science requirement.
****Meets Computer Science competency requirement.

**UNDERGRADUATE COURSES IN COMMUNICATION**

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

1101 *Communication Practicum (0-2).* Supervised instruction for students in extracurricular activities related to video operations and forensics. May be repeated once for credit.

1303 *Introduction to Speech Communication (3-0).* Theory and practice of speech communication behavior in interpersonal, small group, and public communication situations. Meets oral communication requirement. (SPCH 1311)

1304 *Introduction to Mass Communication (3-0).* A survey and analysis of the history, regulations, scope, social implications, and problems of electronic mass media, including radio, television and news media.
1304 Introduction to Mass Communication (3-0). A survey and analysis of the history, regulations, scope, social implications, and problems of electronic mass media, including radio, television and news media.

1310 Fundamentals of Communication (3-0). Introductory communication course focusing on oral communication theory and skills needed by game and communication designers. Course emphasizes team work utilizing the SCRUM technique, interviewing, concept pitching and oral reports that would be found in the gaming and communication design industries. Meets university oral communication core curriculum requirement.

2101 Communication Practicum (0-2). Supervised instruction for students in extracurricular activities related to video operations and forensics. May be repeated once for credit.

2303 Interpersonal Communication (3-0). An introductory course designed to raise student awareness of the complexity and power of the communication process in daily life; to provide students with personally relevant concepts of interpersonal communication; and to help students develop their interpersonal communication skills.

2305 Small Group Communications (3-0). Emphasis on effective group interaction in task-oriented situations. Course will focus on elements of small group structures and communication styles which influence the problem-solving process. Includes small group participation and analysis of group communication. (SPCH 2333)

2306 Basic Television (3-1). Theory and practice of video production and television station operation. Lab practice in studio operations, scriptwriting, fundamental production skills (cameras, microphone, lighting, editing, etc.), studio and field assignments. Includes one-hour production lab.

2307 Basic Radio (3-1). Theory and practice of audio production and radio station operation. Lab practice in studio operations, scriptwriting, fundamental production skills (microphone, recording, editing, etc.), studio and field assignments. Includes one-hour production lab.

2308 Web Page Design (1-2). A computer based course in which students learn to design, construct, and evaluate web pages. Will include the use of web page software. Course meets university computer competency requirement.

3101 Communication Practicum (0-2). Supervised instruction for students in extracurricular activities related to video operations and forensics. May be repeated once for credit.

3302 Broadcast News Gathering (3-1). Theory and practice of electronic journalism. Lab practice in writing and editing new copy, studio and field operations, reporting, preparation of newscasts and stories, studio and field assignments. Includes one-hour production lab.

3303 Radio Workshop (1-4). Application of basic audio skills in radio station setting. Students will produce individual and group projects/productions. Emphasis will be placed on the creative use of the audio medium. Prerequisite: Communication 2307 or instructor's permission. Course may be repeated for credit but not more than once for credit toward Communication major or minor.
3304 Critical Reasoning (3-0). This course is designed to provide an introduction to ideas about rationality and criticism. Through the study of the practical reasoning process, students will learn how to articulate the stages through which actual arguments and discussions go. Class discussion and exercise assignments are used to explore the human transaction known as reasoning.

3305 Mass Communication and Culture (3-0). This course is designed to provide an introduction to the history and theories of mass communication for students majoring in communication and as a general education for students from other disciplines who seek to understand the processes and impact of mass communication. The history and cultural impact of individual media examined will include, print media, film, television, radio and news media.

3306 Communication in Business and Professions (3-0). This course will focus on the study of communicative skills in both the oral and written aspects of presentation in the fields of business and the professions. It will include an analysis of the organizational structures of the workplace as well as job-oriented interviewing from the standpoint of the employer and the employee. Meets oral communication requirement.

3307 Studies in Film (3-0). Students will be exposed to classic methods of film analysis (e.g. historical, content, psychological, genre studies, liturgical, and cultural, et al.). Utilizing a combination of full length films and "film on film," students will gain an understanding of film and related mass media. Course may be repeated for credit when film topic changes (e.g. Women in Film; Minorities in Film; Family in Film; et al.).

3308 Video Workshop (1-4). This course is designed for students interested in applying basic television knowledge and skills to the production of individual and group video projects and productions. Emphasis will be placed on creative use of the video medium.

Prerequisite: Communication 2306 or instructor's permission. Course may be repeated for credit but not more than once for credit toward Communication major or minor.

3309 Family Communication (3-0). The family unit is studied from a communications perspective, considering in depth the communication processes within the family as well as the extent to which they affect and are affected by the interdependence of family members.

3311 Gender Communication (3-0). This course is designed to teach students how gender is socially constructed and sustained in cultural life. Students will be encouraged to expand their communication skills by utilizing styles historically associated with both genders, rather than a single gendered form of speech.

3312 Advanced Web Page Workshop (0-3). This course is designed for students interested in applying basic web page design knowledge and skills to the construction of individual and group projects. Emphasis will be placed on creative web page design and construction. Course meets university computer competency requirement.

Prerequisite: COMM 2308 or instructor's permission. Course may be repeated for credit but not more than once for credit toward Communication major or minor.
3313 Advanced Television Production (3-1). Continued study of camera, lighting and sound techniques. Pre-production and post-production elements also included. Course will focus on producing program content to be aired on campus television station. Prerequisite: Communication 2306.

4101 Communication Practicum (0-2). Supervised instruction for students in extracurricular activities related to video operations and forensics. May be repeated once for credit.

4301 Persuasion (3-0). This course focuses on our dual roles as producers and consumers of persuasive messages. Students will examine persuasion in a variety of texts and contexts, as well as examine persuasive elements in human interaction and behavior. Topics covered include characteristics such as expertise, trustworthiness, and likeability; the use of emotions such as fear and humor; and the sequencing of messages for maximum impact. The course explores how psychological theories about consistency, conformity, and reciprocity help us understand what is persuasive.

4302 Communication Theory and Research (3-0). This course covers a broad exploration of communication theory and research practices. The course introduces various theories of communication and research methods in and across communication contexts. Emphasis is placed on understanding human communication as a symbolic process that creates, maintains, and alters personal, social, and cultural identities.

4303 Studies in Speech. Directed individual study and practice in a selected area of speech. May be repeated for credit when topic varies.

4304 Special Topics (3-0). A course dealing with topics in speech communications. May be repeated for credit when topic varies.

4305 Communication in Human Relations (3-0). This course examines social scientific research and theory on the role of communication in developing and maintaining interpersonal relationships. Nature of interpersonal communication, relationship change processes, interpersonal control through communication and personal communication networks. Prerequisite: Communication 2303: Interpersonal Communication.

4306 Public Relations (3-0). A study of the principles and practices in the field of public relations with special emphasis on practical case study experiences.

4307 Intercultural Communication (3-0). An examination of the interpersonal dimensions of intercultural communication as it occurs in a variety of contexts. Topics include: international cultures, co-cultures, cultural contexts, verbal processes, nonverbal interaction, and ethical considerations for the future. This course may be used to meet the university's multicultural requirement.

4309 Senior Capstone (0-3). The Senior Capstone is the culminating course in the Communication major sequence. Each Capstone is implemented by students with the help and encouragement of an academic advisor. Capstone experiences allow each student to demonstrate the capacity to bring information, skills, and ideas acquired from the major to bear on one significant project. It is aimed at providing students with the opportunity to integrate the knowledge and skills they have acquired as communication majors as well as provide experiences for students to exhibit competent
communication skills learned during their program of study in order to prepare for a career in communication.

**GRADUATE COURSES IN COMMUNICATION**

5303 *Topical Seminar in Speech Communication (3-0).* Special topics in the study of speech communication. May be repeated for credit when topic varies.

5304 *Speech Communication Workshop (1-4).* Advanced study and analysis of speech communication performance areas. Course may be repeated for credit.

5305 *Individual Study in Speech Communication.* Individually guided research in speech communication. May be repeated for credit when topic varies.

5307 *Public Relations (3-0).* Graduate Public Relations is designed to acquaint public administrators and other professionals with the terms, theory and procedures associated with modern public relations efforts. Special emphasis will be placed on practical applications of PR techniques, including organizational analysis, resource preparation, and crisis management.

5308 *Nonverbal Communication (3-0).* The course is designated to provide student with an in-depth examination of the major theories, principles, and latest research findings regarding nonverbal communication and its role in the total communication process. Through assigned readings, class discussions, and research projects, this course will examine how different nonverbal communication codes function in interaction to influence the management of conversation, the impressions formed in interaction, the development and maintenance of relationships, and the process of social influence.

5309 *Organizational Communication (3-0).* This course provides the student with frameworks for thinking about how and why communication occurs at different levels of analysis in organizations, and how to recognize, analyze and improve different communication problems. Through assigned readings, class discussion, and research projects, this course will examine the nature of organizations communication; classical or organizational structure theories; behavioral and systems theories; sense-making theories; organizational climate and cultures and; information flow and communication networks.

5310 *Internet and Society (3-0).* Recognizing and understanding the role of human communication in the development and spread of the internet and related technologies is a vital component of the larger goal of developing critical consumers of mass communication media. The course is designed to provide students with a greater historical, theoretical and practical understanding of the social and cultural foundation and implications of the Internet and related technological systems as shaped by human communication. This course will focus on the social context within which the key communicative/technological developments, have made the present Internet what it is, are taking place.

5311 *Small Group Communication (3-0).* The aim of this course is to study the nature and dynamics of small groups focusing on communication.
research and theory as applied to the process of small group decision-making.

5312 Oral Communication Course Development (3-0). A course designed to prepare students to teach the basic communication course in higher education and other professional environments. The course covers course design, course evaluation, methodologies for skill development, and related topics. Provides theoretical and experiential knowledge about communication goals/objectives, teacher/student communication needs & expectations, reinforcement & feedback, climate & influence, and teacher/student communicator style, characteristics, and behavior.

5313 Mass Communication Theory and Research (3-0). This course is designed to explore the research and theory that attempt to explain the effect of mass communication on individuals and society. The course will primarily concentrate on the mass media of the last two centuries, considering how they have been shaped by society and how they have affected society by reviewing relevant theory and research.

UNDERGRADUATE COURSES IN FINE ARTS

1301 Fine Arts Appreciation (3-0). A survey course which introduces students to selected fine arts areas. The course is taught in three blocks, one each for art, music, and theatre. A specialist in each area will present information of a practical and historical nature, emphasizing aesthetic values and accessibility for lay persons. This course is intended for application to the Core Curriculum requirement or as an elective course open to all undergraduate students.

1302 Intro to Applied Visual Arts (3-0). A hands on, how to class that explains the fundamental concepts of the principles and elements of design, history and basic techniques of two-dimensional art through easy art projects in various traditional mediums.

2301 Special Topics (2-1). A course dealing with topics in the study of fine arts, such as investigations into the history of theatre, film, dance, music and/or the visual arts. Course may be repeated for credit.

2302 Intro to Digital Design (3-0). A course in digital-imaging techniques using Adobe Photoshop. The course will focus on digital image editing, digital painting and design.

2303 Special Topics in Multicultural Visual & Performing Arts (3-0). This course introduces the student to topics in theatre and art from a multicultural viewpoint or women’s studies perspective with particular emphasis given to the social, religious, political and historical relevance of these topics throughout the non-western world.

3301 Arts Administration (3-0). An introduction to the business side of performing and visual arts. Will include promotion/merchandising, organizational management, legal aspects, fund raising, and career planning/development.

3302 Advanced Digital Imaging (3-0). A course in advanced digital imaging techniques including Photoshop and Illustrator. The course will focus on
advanced digital image editing, digital painting and illustration.

3303 Field Studies (3-0). A discussion of subjects such as writing reviews, press releases, visiting professional venues both public, private and non-profit, interviews with artists and behind the scene looks at museum, theaters, foundations and studios. Class also includes resume and portfolio development, career choices, marketing and sales, and other areas which are of interest and importance to all Visual & Performing Arts students/ (Includes major field trip out of the area. Required for all majors - preferably taken in junior year.)

4101 Senior Capstone Project (0-3). The Senior Capstone is the culminating course for the Visual and Performing Arts Major. Each Capstone is a follow-through of a proposal for the project written by students with the help and encouragement of their academic advisor. It is aimed at providing students with the opportunity to integrate the knowledge and skills they have acquired within their area of specialization and share it in a public form. Prerequisite: Written proposal and permission of instructor.

UNDERGRADUATE COURSES IN JOURNALISM*

Journalism Minor
Students will complete 18 SCH in Journalism including Journalism 2301 and 3301 plus 12 additional SCH with at least 3 advanced, selected from Journalism, IT2304, or COMM 2308.

1102 Journalism Laboratory (0-2). Practical application of newspaper reporting and writing. (May be repeated twice). Prerequisite: Permission of the instructor.

2101 Journalism Laboratory (0-2). Practical application of newspaper editorial desk work. Prerequisite: Permission of the instructor.

2301 Newswriting (3-0). Writing for news media; clarity in use of language, style and punctuation; sentence and paragraph structure and organization of stories; credibility of information and new judgment; basic methods of researching and writing. Prerequisite: English 1302 or permission of instructor.

2302 Feature and Editorial Writing (3-0). To provide a basic but comprehensive exposure to the aspects of feature writing and to provide students with the opportunity to improve their writing and interviewing skills through active participation. Course will include interviews with guest speakers who will both lecture and be interviewed for feature stories. Student stories may be selected for publication in The Skyline and other media outlets. The course is intended to stimulate student interest in writing for Sul Ross student publications, including The Skyline student newspaper and The Brand yearbook.

3301 Student Publications Workshop (1-4). This course is designed for students interested in applying basic journalism knowledge and skills to photojournalism, yearbook, or literary magazine production and/or newspaper production. Prerequisite: Permission of the instructor. May be repeated for credit but not more than once for credit toward Communication major.
CATALOG

**3302 Layout and Design (3-0).** Various programs such as PhotoShop, Illustrator, and InDesign will be explored and applied for use in web pages, newspaper and magazine publication, and e-publishing.

**MUSIC**

The Music Program of the Department of Fine Arts and Communication offers opportunities for students of all backgrounds. Music study is available in both instrumental music and vocal music. Course offerings include music theory, music history and literature, as well as private instruction, in keyboard, voice, guitar, woodwinds and brass. Performing ensembles include university choir, wind ensemble, jazz ensemble, mariachi ensemble, and pep band. These ensembles are open to all students. Scholarship funds are readily available for those interested in participating in these ensembles. Further, substantial scholarships are available for students who declare music as a concentration.

For the student interested in music as a career, the department offers various concentrations in music. The concentration may serve as a foundation for careers in music business and music related activities. The Bachelor of Arts in General Studies degree coupled with the certification requirements of the Education Department qualifies a student to teach music in private and public Schools, grades K-12. For those students interested in a professional musical career, there are also many opportunities in the music field such as performance, teaching in the private studio, music business and merchandising, music composition and arranging, and music technology. The Sul Ross music program can help students explore these areas as well as prepare for graduate school.

Students may choose music as a minor. A music minor carries no certification but affords the opportunity to develop musical skills and to further explore musical creativity. The Sul Ross music club supports musical activities on campus and provides opportunities for leadership and fellowship among all students interested in music.

The Department of Fine Arts and Communication also offers select graduate courses in music that can be applied to the Master of Liberal Arts, Master of Education, or as a minor for other masters programs. A student who enrolls in the program beginning Fall, 2012 will select the Bachelor of Arts in General Studies with Music as the area of concentration. Students should consult with an adviser in the Department of Fine Arts and Communication for specific classes associated with a music concentration in their desired area of specialization. This concentration approach to music allows flexibility in designing degrees to meet student needs while maintaining rigor in the course of study.

**Music as a Concentration**

The concentration in music includes Music 1111 (multiple enrollments), 1115, 1121, 1131, 1312, 1321, 1331, 2141, 2341, 3111 (multiple enrollments), 3141, 3311, 3313, 3316, 3341, 3411, 4215, 4216, 4311, 4131, and Piano Proficiency Examination.

The concentration for students seeking certification includes Music 1111 (multiple enrollments), 1115, 1121, 1131, 1312, 1321, 1331, 2141, 2341, 3111 (multiple enrollments), 3141, 3311, 3313, 3316, 3341, 3411, 4215, 4216, 4311, 4131, and Piano Proficiency Examination. In addition, the
following courses from the Department of Education: ED3300, 3302, 3305, 4312, 4314, 4605.

Specialty techniques courses for concentration in instrumental or vocal music may include Music 1114 (two-three enrollments), 1116, and 1314. See an adviser in Fine Arts and Communication for specific requirements.

A Piano Proficiency Examination must be passed before the last semester.

UNDERGRADUATE COURSES IN MUSIC

1111 Individual Instruction (1/2-6). (May be repeated for credit.) One thirty-minute lesson and not less than 5 hours practice per week. Enrollment is open to music majors and minors, and all interested students with the permission of the instructor.

01 Piano...............................10 Trombone
02 Voice...............................11 Euphonium
03 Flute...............................12 Tubas
04 Oboe...............................13 Percussion
05 Clarinet............................14 Guitar
06 Saxophone.........................15 Violin Family
07 Bassoon.........................17 Organ
08 French Horn
09 Trumpet

1112 Vocal Ensembles (0-3). (May be repeated for credit.)
01 University Chorus - This group prepares and presents a major composite musical work each semester. There are usually two performances per semester. Enrollment is open to all students, regardless of their musical skills and/or experience, the ability to match pitch is essential.
02 Concert Choir - This group prepares and presents sacred and secular music of all styles, as well as folk and popular song arrangements. Enrollment is open to all students with permission of the instructor.
03 Vocal Ensemble - This group will prepare and perform music from the classical and popular styles.
04 Musical Theatre Ensemble - This group will prepare and perform music of the musical theatre idiom. Performances may be staged or sung in a concert setting, depending on the repertoire for the given semester.

Prerequisite: Students must be able to accurately match pitch and sing confidently alone or with a group. Placement auditions may be held at the beginning of the semester.

1113 Instrumental Ensembles (0-3). (May be repeated for credit.)
01 Concert Band - This group performs concert band literature. Enrollment is open to all students with permission of the instructor.
02 Symphonic Wind Ensemble - This group prepares and presents the finest of band and wind ensemble literature available. Membership is by audition only.
03 Jazz Ensemble - This group prepares and presents works in styles ranging from early jazz to modern rock. Membership by permission of the instructor.
04 Brass Ensemble - This group prepares and presents selected small
brass ensemble literature. Membership is by audition only.
05 Woodwind Ensemble - This group prepares and presents selected woodwind ensemble literature. Membership is by audition only.
06 Wind Ensemble/Pep Band - This group prepares and performs concert literature as well as pep band music. Performances include both formal settings and athletic events. Enrollment by permission of the instructor.
07 Guitar Ensemble - This group will prepare and perform music from the Classical and Popular Styles. Membership by audition only.
08 Specialty Ensemble - Special instrumentation. Membership by audition only.
09 Percussion Ensemble - Membership by audition only.
10 Orchestra - Membership by audition only.

1114 Instrument Class Instruction (2-0). (May be repeated for credit—maximum 2 SCH each.) Class instruction for music majors and minors who have not had previous study, and for other interested students. Emphasis is on the ability to play and compose for the instruments studied:

01 Strings 03 Brass
02 Percussion 04 Woodwind

1115 Piano Class (0-2). (May be repeated for credit once only) Class instruction for Music majors and minors, and for other students who have not had previous study.

1116 Voice Class (0-2). (May be repeated for credit once only) Class instruction for students who have not had previous study, and for Music majors and minors, and for other students in the use and understanding of the singing voice. Emphasis is on the ability to use the voice correctly by study of fundamentals of vocal technique, sight singing, ear training, and repertoire.

1117 Individual Studies (0-1). Individual study of selected topics in music.

1118 Guitar Class (0-2). ("May be repeated for credit once only). For beginning guitarists. Emphasis on learning cords, strumming, finger style and note reading. Several guitars available for rent. Open to all students.

1121 Ear Training I (2-0). The aural study of basic musical elements with emphasis on sight singing, scales, intervals, chords, and harmonic and melodic diction. Meets two hours per week.

1131 Ear Training II (2-0). Continuation of MUS 1121. Meets two hours per week.

1211 Individual Instruction (1-9). (May be repeated for credit.) Two thirty-minute or one hour lesson and not less than 10 hours practice per week. Designed for Music majors, but other students may enroll with the permission of the instructor.

01 Piano 09 Trumpet
02 Voice 10 Trombone
03 Flute 11 Euphonium
04 Oboe 12 Tuba
05 Clarinet 13 Percussion
06 Saxophone 14 Guitar
07 Bassoon 15 Violin Family
08 French Horn 17 Organ
1310 Problems in Music (3-0). Individual or small group study of specific topics in music on the lower division level. May be repeated for credit when topic varies.

1312 Music Literature (3-0). (A fine arts/humanities course). A course designed to acquaint students with representative music of different ages, styles, media, and forms; and to its historical background. This course meets Fine Arts requirement. (MUSI 1308)

1313 Fundamentals of Music (3-0). An elementary course for general students in the fundamentals of music; singing, piano keyboard, listening activities, and a study of clefs, keys and rhythms will be used to explore these fundamentals. This course meets Fine Arts requirement.

1314 Vocal Techniques (3-0). This course covers three areas: basic theory of singing, including the relationship of the body to singing; lyric diction for choral ensembles and soloists; and vocal/choral rehearsal techniques.

1321 Music Theory I (3-0). A study of basic musical elements with emphasis on terminology, scales, intervals, chords, tonal relationships, and simple part writing.

1331 Music Theory II (3-0). Continuation of MUS 1321. Prerequisite: MUS 1321 or equivalent.

2115 Piano Class II (0-2). (May be repeated for credit). A study to develop keyboard skills, ear training, sight reading, keyboard harmonization. Class instruction is for music majors, minors, or permission from the instructor.

2141 Ear Training III (2-0). The continued aural study of basic musical elements with emphasis on sight singing, scales, intervals, chords, and harmonic melodic dictation as well as musical forms and structures. Prerequisite: MUS 1131.

2341 Music Theory III (3-0). A continuation of musical elements studied in MUS 1331, with greater emphasis on musical structure, analysis, and music writing. Prerequisite: MUS 1331.

3111 Individual Instruction (V2-6). (May be repeated for credit.) One thirty minute lesson and not less than five hours practice per week. Enrollment is open to Music majors and minors, and to other students with the permission of the instructor.

01 Piano 09 Trumpet
02 Voice 10 Trombone
03 Flute 11 Euphonium
04 Brass Ensemble 12 Tuba
05 Clarinet 13 Percussion
06 Saxophone 14 Guitar
07 Bassoon 15 Violin Family
08 French Horn 17 Organ

3112 Vocal Ensembles (0-3). (May be repeated for credit.)

01 University Chorus. This group prepares and presents works by major composers and contemporary composers each semester. There are usually two performances per semester. Enrollment is open to all students regardless of musical skills or experience: The ability to match pitch is essential.

02 Concert Choir
03 Vocal Ensemble

3113 Instrumental Ensembles (0-3). (May be repeated for credit.)

- 01 Concert Band
- 02 Symphonic Wind Ensemble
- 03 Stage Band
- 04 Ensemble Brass Ensemble
- 05 Woodwind Ensemble
- 06 Football Show Band
- 07 Guitar Ensemble
- 08 Specialty
- 09 Orchestra
- 10 Percussion Ensemble

3117 Individual Studies (0-1). Individual study of selected academic topics in music.

3141 Ear Training IV (2-0). The aural study of advanced musical elements with emphasis on sight singing, chromatics, scales, intervals, chords, and harmonic and melodic dictation, as well as forms and structure. Prerequisite: MUS 2141.

3211 Individual Instruction (1-9). (May be repeated for credit.) Two thirty-minute lessons or one-hour lesson and not less than 10 hours practice per week. Designed for music majors and minors but other students may enroll with the permission of the instructor.

- 01 Piano
- 02 Voice
- 03 Flute
- 04 Oboe
- 05 Clarinet
- 06 Saxophone
- 07 Bassoon
- 08 French Horn
- 09 Trumpet
- 10 Trombone
- 11 Euphonium
- 12 Tuba
- 13 Percussion
- 14 Guitar
- 15 Violin Family
- 16 Organ

3217 Individual Studies (0-1). Individual study of selected academic topics in music.

3310 Special Topics in Music (3-0). Topics to be selected from: History and Literature of Music, Music in the General Culture, Techniques of Instrumental or Vocal Music or another topic in the field of music. (May be repeated for credit when topic Varies.)

3311 Music Materials for Children (3-0). A study of music materials and skills which are effective in providing a musical background for children.

3312 Problems in Music (3-0). Individual or small group study of specific topics in music on the upper division level. May be repeated for credit when the topic varies. Prerequisite: junior standing.

3313 Fundamentals of Conducting (3-0). (May be repeated for credit if conducting problem varies.) A study of effective hand and baton techniques used in conducting music ensembles.

3316 Secondary Music Methods (3-0). A study of the value of music in society; music as a fine art; music for the performer; music for the listener; the necessary skills Required for vocalists and instrumentalists, including the understanding of the changing male adolescent voice; appropriateness of music literature for use in instrumental or vocal ensembles for adolescents; music as a cultural force in society; and, basic understanding of instrumental and vocal ensembles organization. Prerequisite: Junior standing and consent of the instructor.
3317 Problems in Music. Individual or small group study of specific topics in music on the upper division level. May be repeated for credit when topic varies.

3341 Music Theory IV (3-0). Continuation of MUS 2341, plus analytical techniques used in the understanding of formal structures found in musical compositions. Prerequisite: MUS 2341 or equivalent.

4131 Senior Recital (1-0). A course to be the capstone of applied music individual instruction. Students will prepare 20 minutes (actual) of music for a public recital, demonstrating proficiency on their instrument or voice. They will also prepare a program, including scholarly program notes which have been researched and relate to the music to be preformed.

4215 Marching Band Techniques (2-0). A study of the problems peculiar to the marching band and their solutions; planning, charting, and rehearsing of marching performances for parades, half-time shows, and contests; the administration of marching band personnel and equipment; baton twirling and drum majoring.

4216 Arranging (2-0). (May be repeated for credit if arranging problem varies.) A practical study of arranging music for a variety of vocal and instrumental ensembles through an understanding of their traditions and problems. Prerequisite: Music 2411 or its equivalent.

4311 History and Literature of Music (3-0). A survey of the history and literature of music, including in-depth study of composers, periods, styles, and musical development from antiquity to the present time. Prerequisite: Permission of the instructor.

GRADUATE COURSE IN MUSIC

5319 Individual Research Problems in Music. The student will do independent work in a limited area of music selected in consultation with the instructor in terms of both departmental and student interest and needs.

5321 Seminar in Music Pedagogy (3-0). Advanced study of teaching methods, analysis, rehearsal and performance for musical instrument or voice in the individual or group setting. May be repeated for credit when topic varies.

THEATRE

Individuals who explore the world of theatre grow in understanding of cultural diversity, self-knowledge, communications skills, and self-expression. With numerous opportunities for ‘hands-on’ performance and technical experiences, coupled with invaluable classroom academics, the Theatre Program at Sul Ross offers a practical overview of educational theatre.

Sul Ross State University offers a Bachelor of Fine Arts in Visual and Performing Arts degree (BFA) with concentrations in Acting/Directing; Technical Design/Production, and Theatre Education. All-level teacher certification in theatre is also available offered for those who currently have an undergraduate degree.

Application to the Bachelor of Fine Arts program is open to all students; however, an audition or portfolio review, evidence of scholarly and creative
achievement, and potential for excellence in the field may be required for theatre scholarship consideration. Students pursuing the BFA in theatre from Sul Ross State University receive the best of both worlds: professional training and a college degree. With professionally-trained faculty, small-class sizes, and state-of-the-art theatre facilities, students are afforded the opportunity to develop into theatre artists with a well-rounded liberal arts education. After graduation Sul Ross theatre graduates have a strong history of pursuing professional careers and/or being successful in obtaining graduate theatre degrees from outstanding universities across the nation. Sul Ross theatre education graduates are widely recruited by K-12 institutions across the state.

Sul Ross State University offers a Masters of Education in Theatre and a Masters of Liberal Arts with a concentration in Theatre. Additional information on these degrees is found under the Department of Education and the Liberal Arts sections of the catalog.

The University and/or its theatre faculty are members of the following organizations in the theatre field: the Association for Theatre in Higher Education, Southwest Theatre and Film Association, United States Institute of Theatre Technology, and the Texas Educational Theatre Association.

Non-theatre majors may fulfill the University’s oral communication requirement by completing Theatre 2304 (Oral Interpretation).

A grade of "C" or better must be achieved in all required theatre courses in order to complete a B.F.A. in theatre.

**Bachelor of Fine Arts**  
(Theatre Major, Acting/Directing – 120 hours)

**Core Curriculum**

**Basic Skills Component** ................................................................. 43

English 1301 and 1302 ............................................................. 6

Mathematics, select from 1310, 1315, 1316, 1342, or 2413 ................................ 3

Communication, Thea 2303 ............................................................ 3

**Basic General Knowledge**

Kinesiology, PE 1150 and one activity course ........................................... 2

English 3304 ........................................................................... 3

Laboratory Science, select two from Astr 1401 or 1402, Biol 1401 or 1402, Chem 1401 or 1402, Geol 1401, 1402 or 2402, Phys 1401, 1402, 2401 or 2402 .............................................. 8

Social Science, select from Anth 1301, Eco 2300 or 2305, Geog1301 or 1302, Phil 1301, Psy 1302, or Soc 2303 .................................................. 3

**Integrity, Tolerance, Ethical Values, and Citizenship**

United States History, select two from Hist 1301, 1302, or 3309 .................. 3

State Government, PS 2306 ............................................................ 3

Federal Government, PS 2305 ........................................................... 3

Multicultural, select from Hist 2301 or 2302, Mas 2301, PS 2307 or WS 2301 ........................................................................................................ 3

**General Education** ..................................................................... 12

English, select one 2000 or higher course .............................................. 3

Fine Arts, Mus 1111-02 (two enrollments) and Mus 3112 and Thea 3306 ........................................................................................................ 6

Computer Science, Comm 2306, or FA 2301 ............................................ 3
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Bachelor of Fine Arts
(Theatre Major, Technical Design/Production – 120 hours)

Core Curriculum
Basic Skills Component .......................................................... 43
English 1301 and 1302 .......................................................... 6
Mathematics, select from 1310, 1315, 1316, 1342, or 2413 ......... 3
Communication, Thea 2303 ..................................................... 3

Basic General Knowledge
Kinesiology, PE 1150 and one activity course .......................... 2
English 3304 ................................................................. 3
Laboratory Science, select two from Astr 1401 or 1402, Biol 1401 or 1402, Chem 1401 or 1402, Geol 1401, 1402 or 2402, Phys 1401, 1402, 2401 or 2402 ..................................................... 8
Social Science, select from Anth 1301, Eco 2300 or 2305, Geog 1301 or 1302, Phil 1301, Psy 1302, or Soc 2303 ............................. 3

Integrity, Tolerance, Ethical Values, and Citizenship
United States History, select two from Hist 1301, 1302, or 3309 ...... 6
State Government, PS 2306 ..................................................... 3
Federal Government, PS 2305 .................................................. 3
Multicultural, select from Hist 2301 or 2302, Mas 2301, PS 2307 or WS 2301 ................................................................. 3

General Education ................................................................. 12
English, select one 2000 or higher course ................................ 3
Fine Arts, select from Art 1301, 1302 or 1303 ............................ 6
Computer Science, IT 3323 ..................................................... 3

Major .................................................................. 60
Theatre 1301, 2301, 2311, 3302, 3303, ................................. 48
3307, 3309, 3312, 3313, 3314, 3315, 3316, 3318, and 4307; plus six enrollments from Theatre 1101, 2101, 3101 or 4101 IT 1305, 2307 and 3303 ..................................................... 9

Electives (at least 3 hours advanced) ........................................... 5

Total 120

Bachelor of Fine Arts
(Theatre Major, Theatre Education – 120 hours)

Core Curriculum
Basic Skills Component .......................................................... 40
English 1301 and 1302 .......................................................... 6
Mathematics, select from 1310, 1315, 1316, 1342, or 2413 ......... 3
Communication, Thea 2303 ..................................................... 3

Basic General Knowledge
Kinesiology, PE 1150 and one activity course .......................... 2
English 3304 ................................................................. 3
Laboratory Science, select two from Astr 1401 or 1402, Biol 1401 or 1402, Chem 1401 or 1402, Geol 1401, 1402 or 2402, Phys 1401, 1402,
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2401 or 2402...........................................................................................................8
Social Science, select from Anth 1301, Eco 2300 or 2305, Geog 1301 or 1302, Phil 1301, Psy 1302, or Soc 2303.........................................................3

Integrity, Tolerance, Ethical Values, and Citizenship
United States History, select two from Hist 1301, 1302, or 3309.....................3
State Government, PS 2306....................................................................................3
Federal Government, PS 2305..............................................................................3
Multicultural, select from Hist 2301 or 2302, Mas 2301, PS 2307 or WS 2301 .................................................................................................................................3

General Education ..................................................................................................12
English, select one 2000 or higher course ..........................................................3
Fine Arts, Mus 1111-02 (two enrollments) and Mus 3112 and
Thea 3306.......................................................................................................6
Computer Science, Comm 2308 or FA 2301 .......................................................3

Major ......................................................................................................................54
Theatre 1301, 2301, 2306, 2307, 2310, 2311, 3301, 3302, 3303 or 3307, 3309, 3310, 3312, 3316, 3318, 4304, 4306, and 4307; plus three enrollments from Theatre 1101, 2101, 3101 or 4101

Education .............................................................................................................21
Education 3300, 3302, 3305, 4312, 4314 and 4605

Total 127

Bachelor of Fine Arts
(Theatre Major, Acting/Directing)

The following is a suggested sequence of courses for students seeking the Bachelor of Arts degree with a major in Theatre, Acting/Directing.

Freshman Year
Theatre 1101, 1301, 2101, 2301, 2306 and 2307 ..............................................14
Communication: Theatre 2303.........................................................................3
English 1301, 1302............................................................................................6
Mathematics 1310 or higher.............................................................................3
Physical Education 1150 and one activity course ............................................2
Music 1111.......................................................................................................1
Political Science 2305 or 2306.................................................................3

TOTAL 32

Sophomore Year
Theatre: select 2311, 3101, 3301, 3302, 3303, 3306, 3307, 3308, 3309, 3312, 3314, 3316 or 3318 .................................................................19
English: 3304 or other literature ....................................................................3
Multicultural: select from Hist 2301 or 2302, Mas 2301,
PS 2307 or WS 2301 ......................................................................................3
Laboratory Science ..........................................................................................4
Music 1112.......................................................................................................1

TOTAL 30

Junior Year
Theatre: select from 2311, 3301, 3302, 3303, 3304, 3306, 3307, 3308,
3309, 3312, 3314, 3316, 3318, 4304 or 4306 .................................................18
English 3304 or other literature ....................................................................3
United States History ......................................................................................3
Social Science .................................................................................................3
Laboratory Science ........................................................................................4
Comm 2308.....................................................................................................3

256
TOTAL 34

Senior Year
Theatre 4307 plus select from 3304, 3308, 3314, 4304 or 4306 .............. 12
Political Science 2305 or 2306 .................................................. 3
United States History ................................................................. 3
Music 3112 ............................................................................... 1
Electives ................................................................................... 5

TOTAL 24

GRAND TOTAL 120

Theatre as a Minor
18 SCH hours of coursework to include 6 SCH advanced; including Theatre 1301 and 1302; plus three enrollments from Theatre 1101, 2101, 3101 or 4101.

Bachelor of Fine Arts
(Theatre Major, Technical Design/Production)
The following is a suggested sequence of courses for students seeking the Bachelor of Arts degree with a major in Theatre, Technical Design/Production.

Freshman Year
Theatre 1101, 1301, 2101, and ................................................. 8
Communication: Theatre 2303 ..................................................... 3
English 1301, 1302 ................................................................... 6
United States History ................................................................. 3
Mathematics 1310 or higher ......................................................... 3
Physical Education 1150 and one activity course ......................... 2
Art: Select two from Art 1301, 1302 or 1303 ............................... 6

TOTAL 31

Sophomore Year
Theatre: select from 1101, 2101, 2311, 3302, 3303, 3306, 3307, 3309, 3312, 3313, 3314, 3315, 3316 or 3318 ........................... 20
English 3304 or other literature .................................................. 3
Multicultural: select from Hist 2301 or 2302, Mas 2301, PS 2307 or WS 2301 ............................................................. 3
Laboratory Science .................................................................. 4
IT: Select from 1305, 2307, 3303 and 3323 .............................. 3

TOTAL 33

Junior Year
Theatre: select from 2311, 3101, 3302, 3303, 3306, 3307, 3309, 3312, 3313, 3314, 3315, 3316, 3318 or 4101 ............................................. 20
English 3304 or other literature .................................................. 3
United States History ................................................................. 3
Social Science ........................................................................... 3
Laboratory Science .................................................................. 4
IT: Select from 1305, 2307, 3303 and 3323 .............................. 3

TOTAL 36
Senior Year
Theatre 4307 ................................................................. 3
Political Science 2305 and 2306 ..................................... 6
IT: Select from 1305, 2307, 3303 and 3323 .................. 6
Electives ...................................................................... 5
TOTAL 20
GRAND TOTAL 120

Bachelor of Fine Arts
(Theatre Major, Theatre Education)

The following is a suggested sequence of courses for students seeking the Bachelor of Arts degree with a major in Theatre, Acting/Directing.

Freshman Year
Theatre 1101, 1301, 2101, 2301, 2306 and 2307 .............. 14
Communication: Theatre 2303 ..................................... 3
English 1301, 1302 ....................................................... 6
Mathematics 1310 or higher ......................................... 3
Physical Education 1150 and one activity course ........... 2
Music 111 .................................................................. 1
Political Science 2305 or 2306 .................................... 3
TOTAL 32

Sophomore Year
Theatre: select 2310, 2311, 3101, 3301, 3302, 3303 or 3307, 3309, 3310, 3312, 3316 or 3318 ........................................ 19
English: 3304 or other literature .................................. 3
Multicultural: select from Hist 2301 or 2302, Mas 2301, PS 2307 or WS 2301 ...................................................... 3
Political Science 2305 or 2306 .................................... 3
United States History .................................................. 3
Laboratory Science ...................................................... 4
Music 1112 .................................................................. 1
TOTAL 36

Junior Year
Theatre: select 2310, 2311, 3301, 3302, 3303 or 3307, 3309, 3310, 3312, 3316, 3318, 4304 or 4306, .................................. 18
English 3304 or other literature .................................. 3
United States History .................................................. 3
Social Science ............................................................. 3
Laboratory Science ...................................................... 4
Comm 2308 .................................................................. 3
TOTAL 34

Senior Year
Theatre 4307 ................................................................. 3
Music 3112 .................................................................. 1
Education 3300, 3302, 3305, 4312, 4314 and 605 ........... 21
TOTAL 25
GRAND TOTAL 127
UNDERGRADUATE COURSES IN THEATRE

(Subject titles and course numbers in parentheses at the end of the course description represent the course equivalent in the Texas Common Course Numbering system.)

1101, 1102 Theatre Workshop (0-3). Practical courses designed for freshman students who do acceptable work in the dramatic productions of the department. Non-theater majors and minors must receive permission from the instructor to enroll. (DRAM 1120, DRAM 1121)

1113 Ballet Folklorico de las Americas (0-1). Sul Ross Ballet Folklorico de las Americas celebrates Mexican cultural heritage via the performance of a variety of Mexican regional dances, both ritual and secular. The Ballet Folklorico serves as a cultural and educational ambassador for the University. Maybe repeated for credit.

1301 Acting I (2-2). A practical laboratory of the principles and technique of acting for the stage. (DRAM 1351)

1302 Introduction to the Theatre (3-0). A survey of the elements of theatre and how they were formed. What makes theatre? Where has it come from and what is the future? Course meets the Fine Arts requirement.

2101, 2102 Theatre Workshop (0-3). Practical courses designed for sophomore students who do acceptable work in the dramatic productions of the department. Non-theater majors and minors must receive permission from the instructor to enroll.

2301 Stagecraft (2-2). A lecture-laboratory course designed to give the student a fundamental knowledge of the theory and techniques of scenic construction and lighting.

2303 Voice for the Actor (3-0). Vocal techniques, including diction and dialect, for performing on the stage.

2304 Oral Interpretation (3-0). A course in the development and use of oral communication performance skills in theatre or communication secondary education, with emphasis on script development for prose, poetry and one-act play UIL competition. Additional emphasis on projection, articulation, breath control, resonance, variety, interpretation and body movement. Required for non-certification communication majors and certification theatre majors. Meets the oral communication requirement.

2305 Topics in Theatre (3-0). A course dealing with topics in the study of theatre, such as "Women in Theatre," "Introduction to Design," and "Stage Management," etc. May be repeated when the topics vary.

2306 Movement for the Performing Arts (1-2). Examination and practical application of the styles of movement for the performing artist. Activities and exercises for the performing artist. Activities and exercises to improve posture, agility, vision, endurance and personal awareness.

2307 Stage Combat (1-2). The practical application of the techniques used in the choreography of stage combat, including unarmed combat techniques and various style of weaponry.

2309 Dance Across World Cultures (1-2). This course introduces the student to the study of dance from a multicultural perspective, with particular
emphasis given to the social, religious, political and historical relevance of
dance throughout the world. Students will learn dance techniques and
choreography from diverse cultures, with the expectation that greater depths
of culture appreciation and understanding arise from participation in the
performance traditions studies. Fulfills the multicultural course requirement.

2310 Introduction to Theatrical Design (2-2). A fundamental course in the
basic aspects of all theatrical design: including scenic, costume, lighting,
sound and property design. Course projects may include fabrication,
modeling, computer-aided design, rendering, and construction.

2311 Stage Management (2-1). A course encompassing the basic theatrical
stage management skills and procedures, such as budgeting scheduling and
personnel management, for the pre-rehearsal, rehearsal and performance
periods of a production

3101, 3102 Theatre Workshop (0-3). Practical courses designed for junior
students who do acceptable work in the dramatic productions of the
department. Non-theater majors and minors must receive permission from
the instructor to enroll.

3113 Ballet Folklorico de las Americas Ensemble (0-1). Sul Ross Ballet
Folklorico de las Americas Ensemble celebrates Mexican cultural heritage
via the performance of a variety of Mexican regional dances, both ritual and
secular. The Ballet Folklorico serves as a cultural and educational
ambassador for the University. May be repeated for credit.

3301 Acting II (2-2). Study and practice of intermediate and advanced
techniques used by actors in the development of good stage habits and
character development.
Prerequisite: Theatre 1301, 1302 or instructor's permission

3302 The History of Theatre I: Greek Theatre through Renaissance Theatre
(3-0). A survey of the important people, works, and developments in theatre
history from the ancient Greeks through the European Renaissance.

3303 Repertory Theatre. (0-5) Practice and theory in the problems of
management, production, and acting in repertory theatre. May be repeated
for credit, but not more than once for theatre majors or minors.

3304 Special Topics (3-0). A course dealing with topics in the study of
theatre, such as theatrical design, mask characterization, stage combat,
acting for the camera, etc. May be repeated when topic varies.

3305 Research (0-3). Individual research on selected subjects to meet
student needs and interests in theatre. May be repeated when topic varies.

3306 The History of Musical Theatre (3-0). The history of the musical theatre
from operetta to contemporary musicals. Exposure and study of major and
minor works of the musical stage.

3307 Musical Comedy Workshop. (0-5) Practical training in the technique
and style of performing scenes and songs from musical theatre. May be
repeated for credit, but not more than once for theatre majors or minors.

3308 Acting III: Acting for the camera (2-2). A study of acting styles specific
to film and television. Emphasis on sense memory, scene work, audition
techniques and preparation to enter the industry.
3309 Stage Make-up (1-2). A practical laboratory of the principles and techniques of stage and film make-up.

3310 Creative Dramatics and Children’s Theatre (2-1). The study of the effects and techniques of creative dramatics in the classroom and the study and understanding of children’s theatre. Required for all theatre certification majors and all Early Childhood education majors.

3311 Playwriting (1-2). The study and practice of the techniques of playwriting from scene work to the completion of a long one-act play.

3312 Script Analysis (3-0). A study of the principles of various styles and periods of dramatic literature, involving a history of criticism from Aristotle to the present. Representative plays will be analyzed for theme, structure, characterization and dialogue with a view to their influences on contemporary theatre. Emphasis is placed on written student criticism and evaluation of plays. Writing enhanced course. Prerequisite: English 1302

3313 Scenic Design (2-1). The theory and practical application of the scenic designer's process from conception to presentation of design and an understanding of the scenic designer's responsibilities and duties as a member of the production team and as the head of the scenic design team. Prerequisite: Theatre 2310

3314 Costume Design (2-1). The theory and practical application of the costume designer's process from conception to presentation of design and construction and an understanding of the costume designer's responsibilities and duties as a member of the production team and as the head of the costume design team. Prerequisite: Theatre 2310

3315 Lighting and Sound Design (2-1). The theory and practical application of the lighting and sound designer's process from conception to presentation of design and an understanding of the designer’s responsibilities and duties as a member of the production team and as the head of the lighting or sound design team.

3316 The History of Theatre II: The Theatre of the English Restoration through Contemporary Theatre (3-0). A survey of the important people, works, and developments in theatre history from the English Restoration through contemporary theatre.

3317 Acting IV: Advanced Acting for the Camera (0-5). Exploration of acting techniques affiliated with mixed media: film, video and game design development.

3318 Directing I (2-1). The technology and application of directing for the stage. Prerequisite: THEA 3312.

3320 Regional Dances of Mexico (2-1). This lecture/participation course introduces the student to the Mexican folkloric dance tradition, with focus on learning the regional dances, culture and costuming for regions performed by the Sul Ross Ballet Folklórico de las Americas and gaining an understanding and appreciation of Mexican culture and history. May be repeated for credit.
4101, 4102 Theatre Workshop (0-3). Practical courses designed for senior students who do acceptable work in the dramatic productions of the department. on-theater majors and minors must receive permission from the instructor to enroll.

4304 Directing II (2-1). Continued study of the theory and application of directing for the stage from the directorial vision to the production of a one-act play.

4305 Studies in Drama (0-3). Directed individual study and practice in a selected area of drama. May be repeated for credit when topic varies.

4306 Acting V: Acting Styles (2-2). An advanced study of acting styles and periods for the stage. Prerequisite: Theatre 3301 or instructor's permission.

4307 Senior Project (0-4). An intensive, independent study of a selected area of theatre, such as directing, writing, or designing of a full-length play or acting in a one-person show, by those seeking a theatre degree or theatre certification. An oral comprehensive examination and exit survey are additional requirements.

GRADUATE COURSES IN THEATRE

5303 Seminar in Theatre Arts and Techniques (3-0). An advanced study of problems of analysis, design, rehearsal and performance in theatre. May be repeated for credit when topic varies.

5304 Theatre Workshop (1-4). An advanced study of problems of analysis, design, rehearsal and performance in modern theatre and classic revivals. May be repeated for credit.

5305 Individual Research (0-4). Directed individual research in selected areas of theatre and dramatic arts. May be repeated for credit when topic varies.
Program Description

The Bachelor of Arts in General Studies is an individualized program of study designed for the student who wishes to pursue an unspecified program of study with which to meet the student's particular needs. It is a flexible degree program open to full or part-time students. This degree reflects a major in General Studies with no minor. General Studies is an interdisciplinary major that encourages students to delve into the problems and prospects of society. Students may select courses from the entire university; suiting studies to the student's own interests and needs without regard to required courses. Students must fulfill the regular requirements for a Bachelor of Arts degree. The general studies common core gives all students fundamental knowledge of skills necessary to competently express themselves, think creatively, solve problems, and understand the nature and function of people and the environment. This basic competency establishes a comprehensive context for understanding the methodologies and problems of studying issues. The semester the student graduates, the student must also enroll in and successfully complete General Studies (GS) 4100, Senior Assessment.

At the time of entrance into the program each student must complete a degree plan with a General Studies advisor.

Bachelor of Arts in General Studies - 120 hours

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<thead>
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<th>Course Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1301, 1302, 2301 or other Literature and 3 SCH sophomore or advanced</td>
<td>12</td>
</tr>
<tr>
<td>Communication 1303 or Theatre 2304</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science: select from Computer Science 1301; Office Systems 1384 or English 2304</td>
<td>3</td>
</tr>
<tr>
<td>Fine Arts: select from Fine Arts 1301; Art 1301; Music 1312, 1313; Theatre 1302 plus an additional 3 SCH selected from: Art, Journalism, Music, Theatre, or IT2304</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>8</td>
</tr>
<tr>
<td>United States History 6 SCH selected from History 1301, 1302 or 3309</td>
<td>6</td>
</tr>
<tr>
<td>Kinesiology: PE1150 and one activity course</td>
<td>2</td>
</tr>
<tr>
<td>Laboratory Science: Eight semester hours selected from Astronomy 1401, 1402; Biology 1401, 1402; Chemistry 1401, 1402; Geology 1401, 1402, 2404; Physics 1401, 1402, 2401, 2402</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics: select from 1310, 1315, 1316, or 1342</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences: select from Anthropology 1301; Economics 2300, 2305; Geography 1302, 2302; Philosophy 1301; Psychology 1302; Sociology 2303</td>
<td>3</td>
</tr>
<tr>
<td>Multicultural Social Science; select from History 2301, 2302; Mexican American Studies 2301; Political Science 2307; Women's Studies 2301</td>
<td>3</td>
</tr>
</tbody>
</table>
Political Science 2305, 2306 .................................................................6
General Studies 4100 .................................................................1
Electives (must have total of 36 SCH advanced) .........................56

Total 120

General Studies (GS) 4100 Senior Assessment (1-0). Senior Assessment is a capstone course in which the students demonstrate proficiency in research and analysis through the engaging in original research.
DEPARTMENT OF
LANGUAGES AND LITERATURE
(including English, Bilingual/ English as a Second Language, French, Spanish, and Women’s Studies)

Department of Languages and Literature
College of Arts and Sciences
Office: Morelock Academic Building, 114
Phone: (432) 837-8151
Fax: (432) 837-8714
E-mail: shileman@sulross.edu

Professor and Chair: Sharon Hileman, Ph.D.

Professors: Nancy Antrim, Ph.D., Nelson Sager, Ph.D., and Beverly Six, Ph.D.

Associate Professors: Ira Blanton, Ph.D., Laura Payne Butler, Ph.D., and Barbara Nelson, Ph.D.

Assistant Professors: Brad Butler, Ph.D., Kathy Stein, Ed.D., and Filemón Zamora, Ph.D.

Lecturers: Ilda Gonzalez, M.A. and Kathy Johnson, Ph.D.

Program Description
The Department of Languages and Literature offers coursework leading to Bachelor of Arts degrees in English and Spanish, as well as minors in English, Spanish, and Women's Studies.

English
The undergraduate English program provides professional training for students interested in becoming certified to teach; students interested in an emphasis on creative writing; and students interested in pre-professional studies in law, medicine, and other fields. The program prepares undergraduates to enter graduate programs in language and literature.

Career Opportunities
Copywriter
Editor
Grant Writer
Journalist
Media Writer
Public Relations Positions
Researcher
Teacher
Technical Writer

SCHOLARSHIPS
Henry Bertrand, Jr. Memorial Scholarship. One $2,000 Scholarship to be awarded to a sophomore, junior, or senior in English. Recipients must have a cumulative 3.0 GPA. Preference is given to students seeking self-improvement through communication, public speaking, vocabulary development, development of extemporaneous speaking abilities and toastmaster skills, and development of the ability to express oneself
completely, confidently and with a sense of humor.

**Ira Blanton Folklore Scholarship.** The Ira Blanton Folklore Scholarship for undergraduates and graduates carries a $500-$1,000 annual award and is given to students interested in folklore who have a 3.0 GPA.

**Kathryn Walker-Clayton Williams, Sr. Scholarship.** The Kathryn Walker-Clayton Williams, Sr. Scholarship for undergraduate and graduate students carries a $1,000 annual award and is given to outstanding English majors.

**Bachelor of Arts**
(English Major-120 hours)

The undergraduate English program provides professional training for students interested in becoming certified to teach; students interested in an emphasis on creative writing; and students interested in pre-professional studies in law, medicine, and other fields. The program prepares undergraduates to enter graduate programs in language and literature.

**Core Curriculum**

**Basic Skills Component** .................................................................46

English 1301 and 1302 .................................................................6

Mathematics, select from 1310, 1315, 1316, 1320, or 1342 ...............3

Communication, select from Comm 1303 or Thea 2304 .....................3

Computer Science or English 2304 or OFS 1384 ...............................3

**Basic General Knowledge**

Fine Arts, select from FA 1301, Art 1301, Music 1312 or 1313 or
Thea 1302 ..................................................................................3

Kinesiology, PE1150 and one activity course ................................2

Laboratory Science, select two from Astr 1401 or 1402, Biol 1401 or......8

1402, Chem 1401 or 1402, Geol 1401, 1402 or 2402, Phys 1401,
1402, 2401 or 2402

Social Science, select from Anth 1301, Eco 2300 or 2305, Geog 1301 ....3

or 1302, Phil 1301, Psy 1302, or Soc 2303

**Integrity, Tolerance, Ethical Values, and Citizenship**

American History, select two from History 1301, 1302 or 3309 ...........6

State Government, PS 2306 ..........................................................3

Federal Government, PS 2305 .......................................................3

Multicultural, select from Hist 2301 or 2302, MAS 2301, PS 2307
or WS 2301 ...............................................................................3

**General Education** ................................................................. 9-11

Fine Arts, select one course from art, journalism, music, theater,
IT 2304 or linguistics ................................................................ 3

Foreign Language, two courses in one language ............................6-8

**Major** ....................................................................................36

English 2302; 2303; 2322;2323;3303; 3304;3312; 4306;4308; 4101 plus 8
SCH additional advanced hours in English

**Minor** (At least hours 6 hours advanced) ......................................18

**Electives** ...............................................................................9

**Total 120**

The following is a recommended sequence of courses for students seeking a Bachelor of Arts in English.
Bachelor of Arts  
(English Major)

Freshman Year
English 1301, 1302 ..........................................................6
Oral Communication Core Requirement ..................................3
Fine Arts Core Requirement ..................................................6
Mathematics Core Requirement ..............................................3
United States History Core Requirement ..................................6
Foreign Language .................................................................. 6-8
Physical Education 1150 and one activity course .....................2

TOTAL 32-34

Sophomore Year
English 2302; 2303; 2322; 2323 ..............................................12
Laboratory Science ..............................................................8
Multicultural Social Science ....................................................3
Political Science .....................................................................6
Social Science .......................................................................3

TOTAL 32

Junior Year
English 3303; 3304; 3312; English elective.................................12
OFS 1384, CS 1301, English 2304 or equivalent .......................3
Minor ..................................................................................9
Electives ................................................................................6

TOTAL 30

Senior Year
English 4101; 4306; 4308; English electives ...............................12
Minor ..................................................................................9
Electives ................................................................................3

TOTAL 24

Bachelor of Arts  
(English Major with Secondary Teaching Certification)
Required Education Courses: ED3300, 3301, 3302, 3303, 3304, 3314, 4322, 4605  
Required English Courses: ENG 2301, 2302, 2303, 2322, 2323, 3303, 3304,  
3312, 4101, 4306, 4308, 4316 plus 3 adv SCH  
Required Communication Courses: COMM 2305, 3305

English major with a concentration in writing  
(non-certification): English  
2304; 2302 or 2303; 2322, 2323, or 3304; 3301; 3320; 3321; 3322; 4101;  
4306 or 4308; and 9 additional SCH in English.

English as a Minor
2322, 2323, 4306, 4308, plus 6 additional SCH in English.

(Subject titles and course numbers in parentheses at the end of the course  
description represent the course equivalent in the Texas Common Course  
Numbering system.)
UNDERGRADUATE COURSES IN ENGLISH

0300 Writing Skills (3-1). This course is designed for students whose score on an approved assessment instrument does not meet minimum requirements on the writing portion of the assessment. In this course, students will develop their writing and reading skills through daily exposure to writing and reading exercises. Topics included in this course are grammar, sentence structure, paragraph development, and essay writing. Areas which will be emphasized for essay writing are appropriateness, unity and focus, development, and organization. Credit in this course cannot be used to satisfy degree requirements. (ENG 0300)

1301 Composition and Rhetoric I (3-0). This is an introductory college course which emphasizes the composition of short essays and reading skills. Required of all students. (ENGL 1301)
Prerequisite: English 0300 or sufficient English, verbal, and reading scores to meet the requirements of English 0300 as described above.

1302 Composition and Rhetoric II (3-0). This course includes the study of various writing modes, with emphasis on exposition, critical analysis, and research techniques. Students will write well-developed, critical, persuasive, documented papers. Required of all students. (ENGL 1302)
Prerequisite: English 1301.

All sophomore and advanced English courses require completion of the freshman English courses as a prerequisite.

2301 Literary Types (3-0). Techniques of critical analysis of major literary types: prose, fiction, poetry, and drama. (ENGL 2339)

2302 World Literature I (3-0). A study of masterpieces of world literature from ancient times to 1600. (ENGL 2331)

2303 World Literature II (3-0). A study of masterpieces of world literature from 1600 to present. (ENGL 2332)

2304 Technical and Professional Writing (3-0). The study and practice of writing technical and professional reports related to scientific, industrial, and commercial fields. (ENGL 2311) Meets computer literacy requirements.

2310 Introduction to Folklore (3-0). An introduction to folklore that may include genres of folklore, fieldwork techniques, cultural contexts for folklore, and folklore in literature.

2312 Writers of the American West (3-0). A study of writers of the American West from the nineteenth century to the present. Readings may focus on works by one author or on works by several authors.

2315 Environmental Literature (3-0). An ecocritical survey of literature that reflects relationships among humans, animals, and nature. Readings will span literature from rural, agricultural, Native American, Hispanic, and world cultures.

2322 English Literature from Beowulf to 1800 (3-0). English literature of the Anglo-Saxon Period, Middle Ages, Renaissance, and Age of Reason.

2323 English Literature from 1800 to the Present (3-0). English literature of the Romantic, Victorian, and Modern Periods.
3301 Contemporary Literature (3-0). A study which emphasizes works of fiction, drama, and poetry since 1960.

3303 Structure and History of the English Language (3-0). The structural essentials of English, with some treatment of the historical development of the language, from Anglo-Saxon to modern English.

3304 Shakespeare (3-0). Shakespeare's principal histories, comedies, and tragedies.

3305 Principles of Linguistics (3-0) Introduction to the study of language with attention to phonology, morphology, and syntax. Includes study of the similarities and differences of English and other languages, especially Spanish.

3306 Language and Culture (3-0) A study of the function of language within social and cultural contexts. Course is cross-listed with Anthropology and Sociology.

3307 Sociolinguistics (3-0). A study of the relationship between language and society including language varieties, speech communities, language and culture, and speech acts and speaking.

3308 Language and Gender (3-0) A study of the role of language in the construction of gender identities, in the use of direct and indirect speech acts, in the creation of gendered metaphors and stereotypes, and in the concept of “language of power.”

3311 Children's and Adolescent Literature (3-0). A survey of children's and adolescent literature and a familiarization with outstanding authors and illustrators of that literature. Includes the application of literary evaluation to children's and adolescent literature and a survey of resources available. Course cannot be used to satisfy Core Curriculum requirements in English. Prerequisite: English major or Interdisciplinary Studies major.

3312 Advanced Composition (3-0). An intensive study of writing techniques useful to the advanced writer. Areas of concentration include grammar, rhetorical strategies, and style.

3320 Creative Writing: Fiction (3-0). Emphasis on writing short stories. Includes the study of ways to examine and incorporate techniques used by established short story writers into original short fiction. Focuses on writing and critiquing original short stories.

3321 Creative Writing: Poetry (3-0). Emphasis on poetry. Provides intensive study of various poetic forms. Focuses on writing and critiquing original poetry.

3322 Creative Writing: Nonfiction (3-0). Emphasis on writing creative nonfiction (creative essays). Includes the study of various rhetorical devices used in effective creative nonfiction. Focuses on writing and critiquing original creative nonfiction.

3323 Creative Writing: Nature Writing (3-0). An intensive study of various forms of nature writing. Focuses on writing and critiquing the natural history essay, travel writing, the ramble, and others.

3324 Creative Writing: Introduction to Novel Writing (3-0). An intensive study of techniques and aims unique to writing and critiquing original novel
4101 Portfolio Capstone Course (1-0). A course required of English majors in which they compile the portfolio of materials which must be submitted to the department for its assessment of program learning outcomes. Students enroll in this class during their final semester in the English undergraduate program.

4302 Southwestern Literature (3-0). A study of the literature of the Southwest with attention given to its regional characteristics and the social background that produced it.

4302 Literary Studies (3-0). Topics include subjects like those named below and are announced in the Schedule of courses for the semester in which they are offered: Autobiography, Multicultural Literature, Graphic Novels. May be repeated for credit when topic varies.

4303 Photography for Writers (3-0) A survey of basic photographic and written skills needed for publication and visual literacy. Emphasis on developing photographs and text as matched pairs in order to enhance the aesthetic value and meaning of both.

4306 American Literature to 1865 (3-0). A study of American literature from Colonial times through the Civil War.


4309 Readings and Research. Individually guided study and research in English, American or international literature or the English language. May be repeated for credit when the topic varies.

4310 Topics in Folklore (3-0). Emphasis on folklore in distinct cultures and literature. Topics may include Western, African-American, Women's, Native American, American, or Multicultural folklore. May be repeated for credit when topic varies. Fulfills multicultural requirement.

4312 Women in Literature (3-0). A study of women writers, images of women in literature and feminist literary criticism. Topics may include Regional Women Writers, 19th Century Women Novelists, Women's Autobiography, Contemporary Women Poets. May be repeated for credit when topic varies. Fulfills multicultural requirements.

4315 Film as Narrative (3-0). A study of narrative in cinematic form, considering both original film creations and adaptation from other literary genres.

4316 Teaching Language Arts (3-0). A study of the development of reading and writing in English, focusing on applying this knowledge to the language arts classroom. Preparation for the TExES certification exam in English Language Arts and Reading 8-12.

4318 Arthurian Literature (3-0) A study of the Arthurian literary tradition from the Middle Ages to the present. The course also emphasizes the impact of Arthurian themes and characters on art and film.

4320 International Literature (3-0) A study of contemporary international, often postcolonial, literature by authors from countries such as Australia, New Zealand, India, the Caribbean, and various African nations.
4322 Predators in Literature (3-0) A study of the way large charismatic predators (lions, tigers, wolves, jaguars) are represented in literature. Perspectives include those from folklore, myth, symbol, religion, and science.

GRADUATE PROGRAM IN ENGLISH

The graduate program in English is designed to meet the needs of students who wish to teach at the high School and community college levels; students who wish to pursue a Ph.D. in English; and students who desire to specialize in creative writing. A variety of options is available to assist students in achieving their objectives:

• the 36 SCH English program (36 SCH English courses)
• the major/minor plan (24-30 SCH in English; 6-12 SCH in
• the thesis option in literature or writing (24 SCH English; 6 SCH thesis) the portfolio option in creative writing (33 SCH English; 3 SCH portfolios)

All graduate students, regardless of option, must complete 6 SCH in English literature, 6 SCH in American literature, and 6 SCH in language/writing/theory. In addition, all graduate students must pass a comprehensive M.A. exam near the end of their studies. Thesis students must provide an oral defense of the thesis.

The graduate faculty can guide students who wish to focus on American and English literature, creative writing, as well as literary and composition theory. The faculty includes those who specialize in linguistics, ecocriticism, folklore, women's literature, and creative writing.

GRADUATE COURSES IN ENGLISH

5300 Studies and Research Techniques in Bibliography and Critical Theory (3-0) An introduction to graduate research methods in literature, including experience in enumerative and analytical bibliography, and to critical theory as applied to literature.

5302 Seminar: Creative Writing (3-0). A writing workshop course which may be devoted to fiction, poetry, nonfiction, or other such genres. May be repeated for credit when topic (genre of writing) changes.

5304 Studies and Research Techniques in General Literature (3-0). Topics include subjects like those named below and are announced in the Schedule of courses for the semester in which they are offered: Contemporary Literature, Folklore, and Multicultural Literature. May be repeated for credit when the topic changes.

5305 Studies and Research Techniques in English Teaching Methods (3-0). Recent trends and discoveries in teaching methods and learning process as related to the teaching and learning of rhetoric, composition, literature, or creative writing. May be repeated for credit when the topic varies.

5306 Seminar: Studies and Research Techniques in English Literature (3-0). Topics include subjects like those named below and are announced in the Schedule of courses for the semester in which they are offered: Shakespeare; British Novel; Victorian Poets; Contemporary Fiction. May be repeated for credit when the topic varies.
5307 Seminar: Studies and Research Techniques in American Literature (3-0). Topics include subjects like those named below and are announced in the Schedule of courses for the semester in which they are offered: Thoreau; American Short Fiction; Southern Fiction; Twentieth-Century Fiction. May be repeated for credit when the topic varies.

5308 Studies and Research Techniques in the English Language (3-0). A study of specific problems concerned with the English language. May be repeated for credit when the topic varies.

5309 Readings and Research. Individually guided research in English or American literature or the English language. May be repeated for credit when the topic varies.

6301 Thesis (0-6). Satisfactory completion of this course will result in an acceptable prospectus presented to the Graduate Committee. The student will normally register for this course no earlier than the third semester of graduate study. The student will enroll each semester of summer term in which assistance is provided by committee members or when use of the library or other research facilities of Sul Ross State University is made.

6302 Thesis (0-6). The student will enroll in this course each semester or summer term in which assistance is provided by committee members or when use of the library or other research facilities of Sul Ross State University is made. Satisfactory completion of this course will result in the completed thesis presented to the Graduate Committee, accepted by the Dean of the School, and filed in the Office of the Provost and Vice President for Academic and Student Affairs.

SPANISH

The Spanish program provides professional training for students interested in becoming certified to teach; students interested in preparing for careers in interpretation and translation; and students desiring to enter other career fields. An endorsement in English-as-a-Second-Language can be earned in addition to the degree in Spanish.

Career Opportunities

- Bilingual Program Officer
- Court Interpreter
- Government Positions
- Public Relations Officer
- Publishing Positions
- Social Worker
- Teacher
- Translator

SPANISH SCHOLARSHIPS

Stather Elliott Thomas Excellence Fund. The Stather Elliott Thomas Excellence Fund awards one to six Scholarships to undergraduates with a 3.0 GPA in Spanish and 2.0 GPA overall.
### Bachelor of Arts
**Spanish Major-120 hours**

The Spanish program provides professional training for students interested in preparing for careers in interpretation and translation; and students desiring to enter other career fields. An endorsement in English-as-a-Second Language can be earned in addition to the degree in Spanish.

#### Core Curriculum

<table>
<thead>
<tr>
<th>Component</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Skills Component</strong></td>
<td>46</td>
</tr>
<tr>
<td>English 1301 and 1302</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics, select from 1310, 1315, 1316, 1320, or 1342</td>
<td>3</td>
</tr>
<tr>
<td>Communication, select from Comm 1303 or Thea 2304</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science or English 2304 or OFS 1384</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Basic General Knowledge

- Fine Arts, select from FA 1301, Art 1301, Music 1312 or 1313 or Thea 1303: 3
- Kinesiology, PE 1150 and one activity course: 2
- Laboratory Science, select two from Astr 1401 or 1402, Biol 1401 or 1402, Chem 1401 or 1402, Geol 1401, 1402 or 2402, Phys 1401, 1402, 2401 or 2402: 8
- Social Science, select from Anth 1301, Eco 2300 or 2305, Geog 1301 or 1302, Phil 1301, Psy 1302, or Soc 2303: 3

#### Integrity, Tolerance, Ethical Values, and Citizenship

- American History, select two from History 1301, 1302 or 3309: 6
- State Government, PS 2306: 3
- Federal Government, PS 2305: 3
- Multicultural, select from Hist 2301 or 2302, MAS 2301, PS 2307 or WS 2301: 3

#### General Education

(9-11)

- Fine Arts, select one course from art, journalism, music, theater, IT 2304, or linguistics: 3
- English 2301 or other literature: 3 SCH sophomore or advanced: 6-8

#### Major

(36)

- Spanish 2301; 2302; 2305; 3301; 3315 or 3316; 3310; 3311; 4310; 4311; BSL 3303; BSL 4330; plus 3 SCH advanced

#### Minor (At least 6 hours advanced)

(18)

#### Electives

(11)

The following is a recommended sequence of courses for students seeking a Bachelor of Arts in Spanish.

### Bachelor of Arts
**Spanish Major**

#### Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish 2301, 2302</td>
<td>6</td>
</tr>
<tr>
<td>English 1301, 1302</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication Core Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Fine Arts Core Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics Core Requirement</td>
<td>3</td>
</tr>
<tr>
<td>United States History Core Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Physical Education 1150 and one activity course</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total 32**
Sophomore Year
Spanish 2305, 3301, BSL 3303 ......................................................... 9
English 2301 (or other literature) plus English
elective sophomore or advanced .............................................. 6
Laboratory Science .................................................................. 8
Political Science ........................................................................ 6
Social Science .......................................................................... 3
TOTAL 32

Junior Year
Spanish 3310, 3311, 3315 or 3316 plus 3 SCH Spanish Elective .......... 12
OFS 1384 or equivalent ............................................................. 3
Minor ....................................................................................... 9
Multicultural Social Science ....................................................... 3
Electives ................................................................................... 6
TOTAL 33

Senior Year
Spanish 4310, 4311, BSL4330 ......................................................... 9
Minor ....................................................................................... 9
Electives ................................................................................... 5
TOTAL 23

Bachelor of Arts
(Spanish Major with Teacher Certification)
Required Education Courses: ED3300, 3301, 3302, 3303, 4314, 4322, 4605
Span 2301, 2302, 2305, 3301, 3310, 3311, 3315 or 3316, 4310, 4311, 4312,
BSL 3303, BSL 4330.

Spanish as a second teaching field: 1401, 1402 (for non-Spanish speakers);
2301, 2302, 3301, 3310, 3311, 3315 or 3316, 4310, 4311.

Spanish as a Minor
Spanish 2301, 2302, 3315 or 3316, and 9 SCH to include 6 advanced.

UNDERGRADUATE COURSES IN SPANISH
(Subject titles and course numbers in parentheses at the end of the course
description represent the course equivalent in the Texas Common Course
Numbering system.)

1401, 1402 First-Year College Spanish (4-0). The first and second
semesters of college Spanish for students without previous knowledge of
the language. An introduction to the four basic language skills: listening,
speaking, reading, and writing, with special emphasis on listening and
speaking. The student who satisfactorily completes this series will be
prepared to register for Spanish 2301. (SPAN 1411, 1412)

2301 2302 Second-Year College Spanish (3-0). For the non-native speaker
of Spanish, this series is the continuation of Spanish 1401, 1402. (Native
speakers, see note below.) Review of grammatical patterns, selected
readings, and brief compositions. (SPAN 2313, 2315)

NOTE: Those whose native language is Spanish, or those who have
otherwise acquired a speaking knowledge of Spanish, should begin their
study of Spanish with Spanish 2301. The course will meet the needs of those who have obtained a speaking knowledge of Spanish with little or no formal study. Successful completion of such a course will prepare the student to register for 2302.

2305 Introduction to Spanish Literature (3-0). An introduction to Spanish literature, covering such areas as literary style, figurative language, literary genres, versification, aesthetics, and text analysis.  
Prerequisite: Spanish 2301 or consent of instructor.

3301 Spanish Grammar and Composition (3-0). A comprehensive review of Spanish grammar and composition designed (1) to further develop the student's comprehension and command of spoken Spanish, (2) to expand the student's vocabulary, and (3) to provide practice in formal written Spanish.  
Prerequisite: Spanish 2302 or consent of instructor.

3308 Studies in Spanish (3-0). A topics course with an in-depth study of specific areas of Spanish and Spanish American literatures and other areas related to Spanish language and Hispanic culture. May be repeated for credit if topic varies. Topics will be chosen from:  
2. Studies in Spanish Literature: Medieval, Golden Age, Modern  
4. Studies in Mexican Literature  
Prerequisite: Spanish 2302 or consent of instructor.

3310 Spanish Literature I (3-0). A survey of major Spanish authors and works from the 11th to the 17th centuries.  
Prerequisite: Spanish 2302 or consent of the instructor.

3311 Spanish Literature II (3-0). A survey of major Spanish authors and works from the 18th to the 20th centuries.  
Prerequisite: Spanish 2302 or consent of the instructor.

3315 Hispanic Civilization and Culture: Spain (3-0). An overview of the development of Spanish culture from ancient times to the present, using the perspectives of history, art, and literature.  
Prerequisite: Spanish 2302 or consent of the instructor.

3316 Hispanic Civilization and Culture: Latin America (3-0). An overview of the development of cultures in Mexico, Central America, and South America, stressing comparisons and contrasts between countries.  
Prerequisite: Spanish 2302 or consent of the instructor.

3317 Modern Spanish Civilization (3-0). This course deals with the study of Spanish civilization since the XVI century to modern day Spain. The concentration will be in the Spanish presence in the Americas.  
Prerequisite: Spanish 2302 or consent of instructor.

3318 Contemporary Latin American Civilization (3-0). This course will study the development and growth of Latin American countries from the XIX century to present day. A socio-economical, literary and political view of contemporary Latin America will be presented.  
Prerequisite: Spanish 2302 or consent of instructor.

4306 Modern Drama (3-0). A study of the Spanish drama of the 19th and 20th centuries. The student will read dramas representative of the different
types and movements of the period and will discuss them in class and in written form. Class discussion conducted in Spanish.
Prerequisite: Spanish 2302 or consent of the instructor

4308 4307 Readings and Research. Directed studies on specific topics of Spanish language, Spanish literature and Spanish American literature. May be repeated for credit when the topic varies.
Prerequisite: Spanish 2302 or consent of instructor.

4310 Spanish American Literature I (3-0). A survey of major Spanish American authors and works from 1492 to 1830.
Prerequisite: Spanish 2302 or consent of the instructor.

4311 Spanish American Literature II (3-0). A survey of major Spanish American authors and works from 1830 to the present.
Prerequisite: Spanish 2302 or consent of the instructor.

4312 Teaching Spanish (3-0). A study of methods and materials used in teaching Spanish from Grades K - 12. The course presents ideas and techniques for teaching grammar, composition, literature, and culture.
Prerequisite: Spanish 2302 or consent of the instructor.

GRADUATE COURSES IN SPANISH

5303 Studies in Spanish American Literature (3-0). Selected authors, works, and genres from Central American, South American, and Mexican literature, including such periods as Colonial, Nineteenth Century, and Modern. Course may be repeated for credit when topic varies.

5309 Readings and Research (3-0). Individually guided research in Spanish or Spanish-American literature or in Spanish language and linguistics study. May be repeated for credit when the topic varies.

UNDERGRADUATE COURSES IN FRENCH

1401 First-Year College French (4-0). An introductory course for students with no previous knowledge of the language. Focus on the basic skills of listening, speaking, reading, and writing.

1402 First-Year College French (4-0). A continuation of French 1401 with additional practice in the four basic skills of listening, speaking, reading, and writing.
Prerequisite: French 1401 or consent of the instructor. (FREN 1412)

2301 Second-Year College French (3-0). Third semester of college French. A continuation of French 1401 and 1402. Continued development and review of speaking, reading, and writing skills in French. Includes literary and cultural readings.
Prerequisite: French 1402 or consent of instructor.

Prerequisite: French 2301.
UNDERGRADUATE COURSES IN BILINGUAL/ENGLISH AS A SECOND LANGUAGE

These courses are offered to support the requirements for the bilingual specialization in elementary education and the ESL endorsement.

**BSL 3303 Structure and History of Spanish (3-0).** The sounds, words and sentence structure of Spanish with an overview of how the language developed and how it varies within Spanish-speaking countries. Designed to provide background knowledge for working with Spanish speaking ESL students as well as students of Spanish.

**BSL 3328 Foundations of Bilingual Education (3-0).** A study of the evolution, rationale, legislation, philosophy, goals, and objectives of bilingual education.

**BSL 3329 Principles and Concepts of Second Language Learning (3-0).** A study of current theories of and approaches to second language learning.

**BSL 4328 Language Arts for the Bilingual Student (3-0).** A study of approaches to achieving language arts competencies for the bilingual student.

**BSL 4329 Content Areas for the Bilingual Student (3-0).** A study of approaches to achieving competencies in social studies, science, mathematics, music, and art for the bilingual student.

**BSL 4330 Bilingual Literature (3-0).** Writing in two languages from a linguistic prospective. Covers children’s books, poetry, novels and short stories.

GRADUATE COURSES IN LINGUISTICS

**5306 Language Acquisition (3-0).** This course focuses on current issues in the field of second language acquisition from a theoretical perspective. Linguistic, sociolinguistic, and cognitive approaches are considered.

**5331 Teaching Second Language Composition (3-0).** This course provides an in-depth survey of the practice of teaching English composition to students whose native language is not English. Topics include rhetorical theory, modes of written English discourse, contrastive rhetoric, teaching methodology, the writing process, evaluating compositions, using computers to write and the problems of non-native writers.

**5341 Linguistics and Reading (3-0).** This course considers the role of linguistics in reading. Topics include language, memory, learning, and culture. The development of reading in both first and second languages is discussed.

**5388 Bilingualism (3-0).** This course considers the positive and negative claims as to the effects of bilingualism on the cognitive, social, and academic development of children as well as examining the assumptions behind various language policies and programs for bilingual children.
WOMEN'S STUDIES
Coordinator: Sharon Hileman, Ph.D.

Women's Studies is intended to increase a student's knowledge and appreciation of the needs, contributions, problems, and aspirations of women—and also of the way that gender shapes the lives of both women and men. The courses emphasize cultural diversity and the varied experiences faced by women in the United States and in the world.

The interdisciplinary nature of Women's Studies provides the opportunity to examine several theoretical/critical frames (e.g., historical, sociological, legal, psychological, ethnographic, scientific, political, aesthetic).

The program in Women's Studies is supervised by the Coordinator of Women's Studies and by the Women's Studies Advisory Committee, which includes program faculty and students.

The structure of the Women's Studies Program at Sul Ross State University is designed to maximize opportunities for participation of all community members.

A minor in women's studies prepares one for a position in business, government, the non-profit sector, or the professions. It also prepares students for graduate studies in a wide range of fields.

Women's Studies as a Minor

To complete a Women's Studies minor, students must earn at least eighteen semester credit hours in courses approved for Women's Studies credit including WS 2301 (Introduction to Women's Studies), WS 3301 (Topics in Women's Studies), and WS 4310 (Senior Colloquium in Women's Studies). At least nine (9) semester hours must be at the upper division level.

Students must select their additional classes from a variety of other courses appropriate for the Women's Studies minor which are taught regularly or as special topics in a number of departments of Sul Ross; these include, but are not limited to the following:

- Communication 3311, Gender Communication.
- Criminal Justice 3311, Women and Crime.
- English 4312, Women in Literature.
- History 4321, History of American Women.
- Political Science 2307, Women and the Law.
- Political Science 3315, Women and Politics

For additional approved courses consult the Women's Studies section of the Schedule of Classes for each semester and the Women's Studies Coordinator.

UNDERGRADUATE COURSES IN WOMEN'S STUDIES

2301 Introduction to Women's Studies (3-0). This course is an introduction to the study of women and gender using interdisciplinary and cross-cultural approaches. The roles and experiences of women of different nationalities, ethnicities, and cultures will be studied. Required course for Women's Studies minor. Fulfills Multicultural requirement.

3301 Topics in Women's Studies (3-0). Studies of specific topics in Women's Studies, such as Hispanic Women, Women in Culture and Society, Women in Modern America. May be repeated for credit when topic varies. Fulfills
multicultural requirement.

4310 Senior Colloquium in Women's Studies (3-0). Required capstone course for the Women's Studies minor. Students consult with Women's Studies Coordinator to select an internship, mentoring project, portfolio, or other special project for the course. Prerequisite: WS 2301, six additional semester hours in Women's Studies, approval of Women's Studies Coordinator.

GRADUATE COURSES IN WOMEN'S STUDIES

5301 Introduction to Women's and Gender Issues (3-0). An interdisciplinary approach to women's and gender studies including historical, legal, psychological, political, scientific, and aesthetic issues.

5302 Topics in Women's Studies (3-0). Studies of specific topics such as Women's Autobiographical Writing, Communication and Gender, Women and the Arts, Comparative Women's History, Gender and Criminal Justice, Postcolonial Women Writers, Global Feminisms. May be repeated for credit when topic varies.
Program Description

The Master of Arts in Liberal Arts is an individualized program designed for the graduate student who wishes to pursue interdisciplinary studies. Such a program encourages students to consider issues and problems in society, culture, literature, science, art, and/or communication. Students will develop comprehensive contexts for Scholarly work and appropriate methodologies for such studies.

Graduate students in Liberal Arts may earn a Master of Arts degree by selecting 33 hours of graduate courses from three disciplines (programs) with the approval of their major advisor and committee. Two of the three disciplines must be from the College of Arts and Sciences. The discipline with the greatest number of semester credit hours is required to be a discipline in the College of Arts and Sciences. In addition, students will complete LA 5101 and LA 5301, LA 5101 and LA 5301 may not be taken concurrently.

At the time of entrance into the program each student must complete a degree plan with a Liberal Arts advisor and select a committee based on the student's areas of interest. Leveling work may be required in some disciplines.

LA 5101 Prospectus for Master's Project (0-1). Students will prepare and present an acceptable prospectus to their committee which describes the project to be undertaken in LA 5301. The project must reflect or incorporate ideas, subject material, research, or creative work from the three disciplines selected for study. Students should enroll in this class after consulting with their advisor and/or committee and must complete the class before enrolling in LA 5301. Prerequisite: Permission of graduate committee.

LA 5301 Master's Project (0-3). Students will complete the interdisciplinary project proposed in LA 5101, submit it to their committee, and respond to questions from the committee in an oral interview/defense. The project may take the form of a creative production (such as an exhibit, performance, portfolio, or video); an extended paper or publishable article; an internship; or a practicum. Projects in other formats are acceptable if they have been approved by the student's committee. This course is to be taken as the final course for the Master of Arts in Liberal Arts program. Prerequisite: Permission of graduate committee and successful completion of LA 5101.