SOUTHWEST TEXAS STATE UNIVERSITY

1983-85 Graduate Bulletin
## Graduate School Checklist

of checklist items, and see sections on Admission Policies for full details.

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<th>WHERE TO DO IT</th>
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<td>Office of Graduate Studies and Research</td>
<td>Submit by following deadlines:</td>
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<td>All colleges attended</td>
<td>Schools must mail transcripts to SWT Graduate School by:</td>
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**NOT TO BE TAKEN FROM THIS LIBRARY:**

- Take the GRE (Graduate Record Exam); Business Admin. majors must take the GMAT (Graduate Management Admission Test).

- Confer with graduate adviser and plan a degree outline.

- Sign official degree outline.

- Submit thesis proposal.

- Pay diploma fee.

- Apply for graduation.

- Remove any incomplete grades.

- Take comprehensive exam.

- Verify that degree requirements have been fulfilled.

- Obtain cap and gown.

- Attend graduation. (Or request absence permit*)

**REMEMBER:**

- NO PERSON IS OFFICIALLY IN A GRADUATE PROGRAM AT SOUTHWEST TEXAS STATE UNIVERSITY UNTIL THAT PERSON HAS A SIGNED OFFICIAL DEGREE OUTLINE. ANY COURSE TAKEN PRIOR TO ADMISSION TO GRADUATE SCHOOL MAY NOT BE APPLIED TOWARD A DEGREE WITHOUT PERMISSION OF THE DEAN OF GRADUATE STUDIES AND RESEARCH.

Note: The SWT Office of Graduate Studies and Research is located in Room 132, J. C. Kellam Bldg.
Any student with difficulty in gaining access to a classroom should identify himself either at registration to the chair of each department in which he takes a course or to each of his instructors on the first day of class.
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Official University Calendar, 1983-1984

Fall Semester, 1983

August 19-22, Friday-Monday .................................................. New faculty orientation
August 23, Tuesday ..................................................................... Orientation for all new transfer and
freshmen students not registered
8:15-9:45 a.m. .............................................................................. General Faculty Meeting
10:00-11:00 a.m. ......................................................................... School meetings as needed
3:30-4:30 p.m. ............................................................................. Department meetings as needed
6:30-8:00 p.m. ............................................................................ Registration for evening and Saturday classes only
August 24, 25, and 26 — Wednesday, Thursday, and Friday ..................................................................... Registration
August 24-September 23 ............................................................. Dates to file applications for degrees to be conferred on December 17, 1983
August 29, Monday ..................................................................... Classes begin
August 29-31 — Monday-Wednesday ............................................ Late registration and adding/dropping courses
September 5, Monday .................................................................. Labor Day (classes do not meet)
September 12, Monday ................................................................. Official Twelfth Class Day
September 30, Friday ................................................................... "Dead Week" (Daily Assignments Only)
October 19, Wednesday ............................................................... Mid-Semester
November 24-26, Thursday, Friday and Saturday ............................................................ Thanksgiving Holidays

November 28, Monday ................................................................. Last day to complete drop procedure or withdraw from the University
January 10, Tuesday ................................................................. Classes begin
January 10-February 10 ................................................................ Dates to file applications for degrees to be conferred on May 19, 1984
January 16, Monday ................................................................. Classes begin
January 16-18, Monday-Wednesday .............................................. Late registration and adding/dropping courses
January 18-20, Tuesday ............................................................... Final Examinations for Special Classes
January 20-22, Thursday ............................................................. Final Examinations
January 23, Friday ..................................................................... Graduation

Spring Semester, 1984

January 10, Tuesday ................................................................. Registration for evening and Saturday classes only
6:30-8:00 p.m. .............................................................................. Registration
January 11, 12, and 13 — Wednesday, Thursday, and Friday ..................................................................... Registration
January 11-February 10 ................................................................ Dates to file applications for degrees to be conferred on May 19, 1984
January 16, Monday ..................................................................... Classes begin
January 16-18, Monday-Wednesday .............................................. Late registration and adding/dropping courses
January 18, Saturday ..................................................................... Final Examinations
January 20, Saturday ..................................................................... "Dead Week" (Daily Assignments Only)
February 17, Friday ..................................................................... Final Examinations
March 7, Wednesday ..................................................................... Mid-Semester
March 12-17, Monday-Saturday ........................................................ Spring Vacation
April 25, Wednesday.................................................................. "Dead Day" (No Classes or Examinations)
April 26-May 1, Thursday-Tuesday .................................................. "Dead Week" (Daily Assignments Only)
April 30-May 1, Monday and Tuesday (Classes Meet) ............................................................ Final Examinations for Special Classes
May 2, Wednesday ..................................................................... Final Examinations
May 3-6, Thursday-Tuesday .......................................................... Final Examinations
May 12, Saturday ..................................................................... Graduation

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Summer Session I, 1984

- June 1, Friday: Orientation for all new students
- June 1, Friday: Registration
- June 1-June 22: Dates to file applications for degrees to be conferred on August 18, 1984
- June 4, Monday: Classes begin
- June 5, Tuesday: Only day to register late and to add/drop courses
- June 7, Thursday: Official Fourth Class Day
- June 15, Friday: Last day to complete drop procedure with an automatic grade of "W"
- June 20, Wednesday: Fall term (three weeks classes)—final examinations
- June 29, Friday: Last day to complete drop procedure or withdraw from the University
- June 30, Saturday: Classes meet

Summer Session II, 1984

- July 10, Tuesday: Orientation for all new students
- July 10, Tuesday: Registration
- July 11, Wednesday: Classes begin
- July 12, Thursday: Only day to register late and to add/drop courses
- July 16, Monday: Official Fourth Class Day
- July 25, Wednesday: Last day to complete drop procedure with an automatic grade of "W"
- July 27, Friday: Fall term (three weeks classes)—final examinations
- August 7, Tuesday: Last day to complete drop procedure or withdraw from the University
- August 14, Tuesday: Last day of classes
- August 15, Wednesday: Examinations
- August 16, Wednesday: Graduation
- August 24-27, Friday-Monday: New faculty orientation
- August 28, Tuesday: General Faculty Meeting

1984

JANUARY

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Official University Calendar, 1984-1985

The official university calendar for the school year 1984-1985 will be available at a later date in the official SWT Schedule of Classes and in the 1983-85 Graduate Bulletin Supplement when published.
General Information

Setting

Located at the foot of the Texas Hill Country, where blackland prairies turn into beautiful hills, Southwest Texas State University enjoys a setting that is unique among Texas universities. The beauty of the crystal clear San Marcos River and many sprawling cypress and pecan trees on the campus adds to the charm of this picturesque locale. Although major metropolitan centers are not far away, San Marcos has managed to retain the charm of a smaller community, and Southwest Texas State University still has a real university atmosphere — a place where faculty and students take the processes of teaching and learning seriously. From historic red-steepled Old Main, with its ivy-covered walls, to the Lyndon Baines Johnson Memorial Student Center, with its modernistic dome-covered plaza, you get the feeling that you are indeed on a college campus that is special.

Sound academic programming that combines the best of liberal arts education with professional, career-oriented curricula provides a broad range of educational options, including graduate degree programs in a wide variety of academic and professional areas.

History

Southwest Texas State University was established in 1899 by the Twenty-Sixth Legislature as “Southwest Texas State Normal School.” Opening its doors in 1903 with only 303 students, Southwest Texas State University has grown from a two-year normal school to a multi-purpose university with an enrollment of more than 16,000.

Since its founding, the University has grown and developed in terms of enrollment, curriculum, and stature. Its widened scope has matched legislative action that has changed its name through four distinct phases of development.

In 1923, the school became “Southwest Texas State Teachers College.” In 1959, the word “Teachers” was dropped from its title. The Sixty-First Legislature changed the name to “Southwest Texas State University” in 1969, recognizing that Southwest Texas had become a first-class regional, state, and national institution of higher learning.

Effective leadership of a succession of presidents has aided the school’s progress.

The first was T. G. Harris, a former Austin public school superintendent, who served until 1911. He was succeeded by Dr. C. E. Evans, also a veteran public school administrator, who was president for 31 years. Upon Dr. Evans’ retirement in September, 1942, Dr. J. G. Flowers became president. Dr. Flowers was an alumnus of Southwest Texas State, and a former president of State Teachers College in Lock Haven, Pennsylvania.

When President Flowers retired in 1964, Dr. James H. McCrocklin became the fourth president. Dr. McCrocklin resigned in April, 1969, and Dr. Leland E. Derrick assumed the post of acting president. Dr. Billy Mac Jones, Chair of the Department of History at Angelo State University, became president in September, 1969. Upon Dr. Jones’ resignation in August, 1973, Mr. Jerome C. Cates, Vice President for Fiscal Affairs, became interim president. Dr. Lee H. Smith became the University’s chief executive on July 15, 1974. The former University of Texas at Dallas vice president retained the presidency until November 1, 1982.

Mr. Robert L. Hardesty, former Vice Chancellor for Administration with the University of Texas System, has brought to the Office of the President a wealth of experience in governmental affairs and education on the state and national levels. He has been appointed to national posts by three United States Presidents, and serves currently as Chair of the Board of Governors of the United States Postal Service and as a member of the Inter-Governmental Advisory Council on Education.

Southwest Texas State University is a part of the Texas State University System. The nine-member Board of Regents, Texas State University System, governs Southwest Texas State University, and three sister institutions — Angelo State University, Sam Houston State University, and Sul Ross State University.
Authorization

The establishment of a Graduate School at Southwest Texas State University was authorized by the Board of Regents at its meeting on July 15, 1935. Graduate courses were first offered during summer 1936, and the first Master of Arts degree was conferred at the spring 1937 commencement. In 1950, the Board of Regents authorized the granting of the Master of Education degree in addition to that of Master of Arts. In 1968, action of the Coordinating Board, Texas College and University System, added the degree of Master of Business Administration. In 1972, the University was authorized to grant the degrees of Master of Science and Master of Arts in Teaching, and in 1973 the degrees of Master of Public Administration and Master of Science in Health Professions. The degrees of Master of Arts in Interdisciplinary Studies and Master of Science in Interdisciplinary Studies were authorized in 1978. In 1979, the Master of Science and Master of Arts degrees with a major in Computer Science were authorized by the Coordinating Board. In 1980, a non-thesis option Master of Arts degree with majors in Speech Communication and Theatre Arts was approved; and a Master of Education and a Master of Arts with a major in Educational Administration was authorized. During fall 1981, the Coordinating Board authorized two new majors within the Master of Education degree: Special Education and Agricultural Education. In addition, the Master of Music replaced the Master of Education with a Music or Music Education major. And in spring 1983, the Coordinating Board authorized implementation of a Master of Applied Geography degree.

Organization

The University is organized into the School of Applied Arts and Technology, the School of Business, the School of Education, the School of Fine Arts and Communication, the School of Health Professions, the School of Liberal Arts, the School of Science, and the Graduate School.

Objectives of the Graduate School

The purpose of the Graduate School is to provide the means for continued intellectual growth through advanced and specialized education. The ultimate aim is to develop leaders in the professions and in research. More explicitly, the following objectives have been adopted to add both breadth and depth to the academic and professional preparation received at the undergraduate level:

- To reinforce and extend students' academic and professional equipment as a means of improving professional competence.
- To familiarize students with current and recent research in their fields; to acquaint them with the techniques of research; and to enable them to interpret their own and current research, to derive significant implications therefrom, and to apply pertinent findings.
- To challenge students intellectually, to develop their power of independent thought, and to direct them toward the goal of greater effectiveness in both their personal and professional lives.
Graduate Council

The Graduate Council determines the policies of the Graduate School, and these policies are administered by the Dean of Graduate Studies and Research. Besides the Dean, who serves as Chair, the Graduate Council is composed of a voting representative of each department which offers a graduate major and a non-voting representative from each department offering only a graduate minor or support courses. The President of the University, the Vice President for Academic Affairs, and the University Registrar are ex-officio members of the Council.

Voting Members
Henrietta H. Avent, Department of Health and Physical Education (1979-1987)
Randall W. Bland, Department of Political Science (1981-1984)
D. Gary Carman, Department of Finance and Economics (1979-1984)
Beverly A. Chiodo, Department of General Business (1980-1984)
J. Peter Coulson, Department of Speech Communication and Theatre Arts (1981-1985)
James R. Crawford, Department of Physics (1981-1984)
John W. Fitch, Department of Chemistry (1983-1987)
Herbert H. Hannan, Department of Biology (1979-1987)
Robert L. Hefner, Department of Education (1981-1987)
C. Don Knotts, Department of Agriculture (1980-1984)
Robert D. Larsen, Department of Geography and Planning (1983-1987)
Ingeborg R. McCoy, Department of Modern Languages (1983-1987)
Robert T. Mooney, Department of Allied Health Sciences (1979-1987)
Larry T. Patterson, Department of Management and Marketing (1982-1984)
James W. Pohl, Department of History (1975-1987)
Alvin P. Short, Department of Sociology (1977-1985)
John W. Spellmann, Department of Mathematics and Computer Science (1982-1987)
Joe W. Walker, Department of Technology (1981-1985)
Robert W. Walts, Department of English (1983-1985)
Doyle G. Ward, Department of Special Education (1976-1985)
J. Michael Willoughby, Dean of Graduate Studies and Research, Chair
Darwin E. Winfield, Department of Health Administration (1977-1985)
Byron A. Wolverton, Department of Music (1978-1986)

Non-Voting Members
Howard T. Balanoff, Department of Political Science (1982-1986)
Alfred E. Borm, Department of Mathematics and Computer Science (1982-1986)
Philip J. Salem, Department of Speech Communication and Theatre Arts (1981-1985)
William E. Stone, Department of Criminal Justice (1982-1986)
M. Joan Terry, Department of Home Economics (1980-1984)
Marshall R. Wortham, Department of Art (1979-1987)
Loyd S. Wright, Department of Psychology (1981-1987)

Ex-officio
Robert L. Hardesty, President of the University
Susan W. Wittig, Vice President for Academic Affairs
M. Louise Johnson, University Registrar
Characteristics of Graduate Study

Graduate study affords students of superior ability opportunity for continued intellectual growth and development. It presupposes a broad background of knowledge, adequate preparation in the major and minor fields of study, and a command of the skills and techniques needed to carry on intensive research and investigation with a high degree of resourcefulness and self-direction. Policies of the Graduate Council provide that graduate instruction differs from undergraduate instruction in at least the following respects:

- More emphasis is placed on bibliography and on the use of library materials.
- More extensive reading is required.
- More comprehensive papers and reports are required.
- The graduate student is expected to assume greater responsibility and to exercise more initiative.
- Seminar methods will be employed more frequently, requiring more class participation on the part of the student.

Admission Policies

General Admission Policies

The requirements set forth on the following pages are minimal for admission to the Graduate School. Meeting them does not necessarily insure acceptance into a departmental program as many departments have established admission standards more stringent than the minimum, and because all applications must receive departmental recommendation for admission. The University also reserves the right to deny admission to any prospective or former students who have criminal records including a conviction of a felony, offenses involving moral turpitude, or other offenses of serious nature. In addition to the following requirements, most departments recommend that you arrange a personal interview with the appropriate departmental graduate adviser.

Admission of United States Citizens

Admission into the Graduate School as a degree seeking student requires:

1. An official application for admission.
2. Two official copies of transcripts from each college or university attended mailed directly from the schools to the SWT Office of Graduate Studies and Research. (Exception: If all your previous coursework, including work taken at other schools, is listed on your SWT transcript, then you only need to request two official SWT transcripts.)
3. An acceptable score on the General portion of the Graduate Record Examination (GRE), or an acceptable score on the Graduate Management Admission Test (GMAT) if you will be seeking an MBA degree.
4. Acceptance by your proposed major department.
5. Acceptance by the Dean of Graduate Studies and Research.

Admission of Non-United States Citizens (International Students)

An international applicant is defined as an applicant who is not a citizen of the United States. Such persons attend American colleges and universities as guests of the United States government. As such, they fall under regulations of the Immigration and Naturalization Service of the United States Department of Justice. University rules applying to such students must comply with federal law; hence, admission requirements for international students differ from those for United States citizens.

Admission into the Graduate School under degree-seeking status for international students requires:

1. A non-refundable admission/evaluation fee.
2. An official application for admission.
3. **Two** official copies of transcripts from each college or university attended mailed directly from the schools to the SWT Office of Graduate Studies and Research.
4. An acceptable score on the General portion of the Graduate Record Examination (GRE), or an acceptable score on the Graduate Management Admission Test (GMAT) if you will be seeking an MBA degree.
5. An acceptable TOEFL score if English is not your native language.
6. Acceptance by your proposed major department. (An international applicant must be accepted for a program of study approved by a department.)
7. Acceptance by the Dean of Graduate Studies and Research.
8. A tuition/fees deposit as set forth by the SWT Office of Admissions.

**Admission of New Students**

You are required to meet all requirements as identified above under either the United States Citizen category or the Non-United States Citizen category if you plan to seek a graduate degree at SWT.

**Admission of Former Students**

A. If you last attended SWT as an undergraduate student working on a baccalaureate degree and you now plan to seek a graduate degree at SWT, you must:
   1. As a United States citizen, meet all requirements as identified above under the United States Citizen category; or,
   2. As a non-United States citizen, meet the application, transcript, GRE/GMAT, and departmental and graduate dean approval requirements as identified above under the Non-United States Citizen category.

B. If you last attended SWT as a graduate-degree seeking student, you obtained your graduate degree already, and you now plan to seek another graduate degree at SWT, you must:

   As either a United States citizen or a non-United States citizen, submit a new application for admission, have two official copies of your SWT transcript which shows your graduate work (and two official copies of any other school transcripts showing work taken since your last attendance at SWT) forwarded to the SWT Graduate School, have an official GRE (GMAT for prospective MBA students) score forwarded to the SWT Graduate School, and meet departmental and graduate dean approval.

C. If you last attended SWT under a non-degree seeking status (as a post-graduate, special student, etc.) and you now plan to seek a graduate degree at SWT, then you need to meet all requirements as listed above under the United States Citizen category, or if you are a non-U.S. citizen then you must meet the requirements identified above under the Non-United States Citizen category.

D. If you previously attended SWT and do not meet the above definitions (A, B, or C) you will need to contact the Office of Graduate Studies and Research for specifics regarding your admission.

**Admission Deadlines**

If you wish to pursue a master's degree at SWT you must apply for admission through the Graduate School regardless of what degree you hold.

Application material should be submitted to the Office of Graduate Studies and Research no later than the following deadlines in order to insure processing for the desired semester:

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<tr>
<th>Semester</th>
<th>Deadline</th>
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<tr>
<td>Fall Semester</td>
<td>July 15</td>
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<td>Spring Semester</td>
<td>December 1</td>
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<tr>
<td>Summer Session I</td>
<td>April 15</td>
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<tr>
<td>Summer Session II</td>
<td>June 1</td>
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</table>
International student applicants, however, are urged to have all application materials submitted at least 60 days prior to the first day of class.

Applications received after the published deadline dates will be processed on a time-available basis only. However, the Office of Graduate Studies and Research will make every effort to process late applications received through the last day of the registration period.

Applications are for specific semesters. If you are unable to enroll for the semester for which you are accepted, contact the Office of Graduate Studies and Research so that your application can be updated for enrollment in a subsequent semester.

**Extended Admission**

If you plan to seek a graduate degree at SWT and are unable to have your official transcripts sent prior to the published deadline, you may be permitted to enroll under the "Extended Admission" status upon the condition that the official transcripts will be received in the Office of Graduate Studies and Research within a specific period. If the official transcripts are not received by the end of this period (usually 30 days during the long semester and 15 days during each summer session), the Dean of Graduate Studies and Research may require you to withdraw from your class or classes immediately.

**Registration Termination**

The Dean of Graduate Studies and Research may terminate the registration of any student who fails to comply with Graduate School and/or other appropriate University regulations.
Admission Documents

All admission materials must be filed with the office of the Dean of Graduate Studies and Research, located in Room 132 on the first floor of the J.C. Kellam Building. The mailing address is as follows:

Office of Graduate Studies and Research
Southwest Texas State University
San Marcos, Texas 78666-4605

All materials submitted become the property of the University and cannot be released.

Incomplete application files are kept for one year only; after one year, they are disposed of.

Application for Admission

Applications for admission must be made on the official forms which may be found at the back of this Graduate Bulletin or they may be obtained from the Office of Graduate Studies and Research.

Official Transcripts

If you plan to seek a graduate degree at SWT, you must have two official transcripts from each school attended sent to the SWT Graduate School. The transcripts cannot be hand-carried nor mailed in by you. The transcripts must reflect all college work attempted and any degree(s) conferred.

Transcripts from foreign institutions must be accompanied by translations into English, if appropriate, and must carry any additional legends which will assist in the evaluation.

Graduate Record Examination

All applicants under the degree-seeking admission status are required to take the General portion of the Graduate Record Examination (Verbal and Quantitative portions combined), except for prospective M.B.A. students. The official results of the GRE must be received in the Office of Graduate Studies and Research no later than the end of the first long semester of your enrollment in Graduate School. If the GRE has not been taken prior to your second semester of desired enrollment, the Dean of Graduate Studies and Research may deny you permission to enroll. In some instances also, you may be required to have your score on file prior to admission.

Information bulletins and test application forms can be obtained from the Educational Testing Service, Box 955, Princeton, New Jersey 08541 U.S.A., or from the Counseling Center at Southwest Texas State University, or from the Office of Graduate Studies and Research at SWT. The GRE is administered several times each year (usually in February, April, June, October, and December) at testing centers in the United States and abroad. Southwest Texas State University is an approved testing center. Applications must be received by the Educational Testing Service approximately five weeks in advance of each test; therefore, you should obtain the GRE information bulletin and application at least seven weeks in advance. A minimum of six weeks should be allowed for the examination results to reach the University.

Graduate Management Admission Test

All applicants for the Master of Business Administration degree program are required to take the Graduate Management Admission Test. The official results of the GMAT must be received in the Office of Graduate Studies and Research no later than the end of the first long semester of your enrollment in Graduate School. If the GMAT has not been taken
prior to your second semester of desired enrollment, the Dean of Graduate Studies and Research may deny you permission to enroll. In some instances also, you may be required to have your score on file prior to admission. Information bulletins and test application forms can be obtained from the Educational Testing Service, Box 966-R, Princeton, New Jersey 08541 U.S.A., or from the Counseling Center at Southwest Texas State University, or from the Office of Graduate Studies and Research at SWT. The GMAT is usually administered each year in January, March, June, and October.

Test of English As A Foreign Language

All international applicants must meet proficiency requirements in the English language and therefore are required to have the official results of the Test of English as a Foreign Language sent before the application for admission will be considered. A minimum score of 550 is required for admission. (Native speakers of English are exempt). The score must be mailed directly to the SWT Graduate School by the Educational Testing Service. In addition, in some cases some applicants may be required to provide further evidence of proficiency in the English language.

Official TOEFL scores more than two years old are not released by the Educational Testing Service; therefore, if you take the TOEFL more than two years before the semester for which you are applying, you must retake the TOEFL so that you can have a current valid score submitted. TOEFL score reports which bear the designation “Applicant’s Copy” are not considered official scores for admission purposes.

The TOEFL is administered at various centers in the United States and abroad at least five times each year. Application forms and information bulletins may be obtained from the Educational Testing Service, Box 899, Princeton, New Jersey 08541 U.S.A. or from the Counseling Center at Southwest Texas State University. SWT is an approved testing center for the TOEFL.

Admission/Evaluation Fee

If you hold or will be holding a non-immigrant visa while in the U.S. or if your application is considered for admission on the basis of foreign credentials, you, like all international students, must submit a non-refundable admission/evaluation fee of $25.00 (U.S. currency) along with the Application for Admission to the Graduate School. No application will be considered for admission until the necessary fee is paid.

Tuition and Fees Deposit

An international student applicant to Graduate School, after meeting all admission requirements as outlined above, is required to submit a $1,600 deposit (U.S. currency) to cover a portion of the tuition and fees expenses which will be incurred. You will need to contact the International Student Admission Section in the SWT Office of Admissions for information on the required deposit.

F-1 Visa

SWT will not issue an I-20 Form until all of the requirements for admission have been met and the Dean of Graduate Studies and Research has approved the graduate adviser’s recommendation for admission. An international student who is on an Immigrant Visa is not required to have a Form I-20.
Categories of Admission

Degree-seeking Applicants

Admission to the SWT Graduate School is granted by the Dean of Graduate Studies and Research upon the recommendation of the graduate adviser or the department Chair in the degree program which you wish to enter. The Dean of Graduate Studies and Research may refuse admission to any applicant regardless of whether or not you meet the admission requirements, if the Dean of Graduate Studies and Research judges that such action is in the best interests of you or of the University.

Regular Admission. Regular degree-seeking admission may be granted to you if you meet the following minimums:

1. Have a grade-point average of 2.75 on a scale of 4 (an MBA applicant must have a 3.25 GPA) calculated upon the last 60 semester hours of undergraduate work before your Bachelor's and any previous work in a graduate or professional school, or
2. Have a GPA of less than 2.75 but at least 2.50 and a Graduate Record Examination (GRE) General (Aptitude) score of 900 or above, or
3. Have an MBA Admission Index of 1,000, plus a Graduate Management Admission Test score of 400, if you are seeking admission to the MBA program (see the detailed section under the departmental pages with the School of Business heading regarding calculation of the admission index), AND,
4. Meet any special requirements imposed by the graduate program for which application is made.

Only courses with letter grades or numerical equivalents will be used in calculating the grade-point average. Only work earned in resident credit is evaluated, and the resident credit must be earned at the school granting the degree(s).

Conditional Admission. The graduate adviser in the degree program which you seek to enter may recommend to the Dean of Graduate Studies and Research that you be "conditionally" admitted to study toward the degree even though you may or may not meet the minimum requirements for admission. This recommendation is based on evidence that you can successfully pursue graduate study and is governed by the stated admission policies in your proposed program.

If you are conditionally admitted to a graduate degree program, the Dean of Graduate Studies and Research and the graduate adviser will impose certain requirements upon your continued study. When you have satisfied these conditions, you will be unconditionally admitted to study for the degree. If the conditions are not satisfied within the specified time limit, the Dean of Graduate Studies and Research may deny permission to re-enroll.

Upon the recommendation of your graduate adviser to the Dean of Graduate Studies and Research, some or all of the courses you take during your period of conditional admission may count toward the degree.

Graduating Seniors. If you are a senior and have a superior academic record and lack 12 or fewer semester hours toward graduation, you may, with the approval of the proper department Chair (in the department in which you wish to pursue graduate studies) and approval of the Dean of Graduate Studies and Research, register during your final semester of undergraduate study for courses to be applied toward your prospective master's degree. You will be required to meet all other Graduate School admission criteria.

Non-degree Seeking Applicants

Special Student Admission. If you wish to take courses but do not want degree credit, you may enroll as a Special Student. (Example: You wish to take a course solely for personal enrichment). To enroll as a Special Student, you must:

1. File with the Office of Graduate Studies and Research an official Application for Admission to the Graduate School (for informational purposes);
2. Sign a Special Student form, which is available in the Office of Graduate Studies and Research.

   NOTE: Courses taken as a Special Student during, or after, fall, 1981, are not valid as credit toward a graduate degree program.

Visiting Student Admission. With the permission of the Dean of Graduate Studies and Research and the graduate adviser, if you are currently pursuing a graduate degree at another institution, you may enroll in graduate courses at SWT. Courses taken at SWT under the Visiting Student status may not be counted toward a graduate degree at SWT, should you later enter a degree program here. As a visiting student, you must:

1. File with the Office of Graduate Studies and Research an official Application for Admission to the Graduate School;
2. Submit a Letter of Good Standing from the graduate dean of the other institution giving you official permission to enroll and to transfer the course(s). The letter should specifically identify the course(s) by name and number and should state the semester(s) in which you will be taking the course(s).

Applicants Seeking Certification

If you are seeking certification only (rather than seeking a graduate degree) and you hold at least a baccalaureate degree, you may gain admission as a “Post-Graduate.” As a post-graduate student, you must:

1. File with the Office of Graduate Studies and Research an official Application for Admission to the Graduate School;
2. Submit a copy of your transcript which shows your highest college degree earned.

There are no entrance GPA requirements nor GRE requirement. You must apply for entrance through the Graduate School whether you plan to take only graduate courses, only undergraduate courses, or a combination of both.

If you have been granted admission as a post-graduate student and you wish to apply for admission to a degree program, you will need to submit all documents and comply with all instructions as identified earlier under the degree-seeking admission information. After you are regularly admitted to a graduate degree program, you may wish to utilize some of your courses taken under the post-graduate category toward your graduate degree. Upon the recommendation of your graduate adviser and with approval of the Dean of Graduate Studies and Research, effective fall, 1982, 6 semester hours taken under the post-graduate status may be counted toward your graduate degree. (This exception applies to any student accepted as degree-seeking effective fall, 1982, and later).

Applicants Seeking Second Baccalaureate Degree

The Office of Graduate Studies and Research is charged with the processing of all admission paperwork for students who already possess a baccalaureate degree. Thus, if you wish to seek a second baccalaureate degree, your initial contact will be with the Office of Graduate Studies and Research.

After this initial contact, your file will be referred to the Office of Admissions and you will continue contact with that office until you have completed your second baccalaureate degree. Normally, the program of study for a second baccalaureate degree consists of a minimum of 30 additional undergraduate semester hours beyond your first baccalaureate, and these hours will be prescribed by the Chair of your proposed major department.

If you have a second baccalaureate degree and wish to apply for admission to the SWT Graduate School, your grade-point-average is calculated on your last 60 undergraduate semester hours, including those on the second undergraduate degree. (This is the only circumstance in which undergraduate credit hours, taken beyond the baccalaureate degree, are so utilized). Additionally, if you have any graduate or professional work, these hours may also be used in conjunction with your last 60 undergraduate semester hours to arrive at your admission GPA.
Applicants Seeking Second Master's Degree

If you wish to pursue a second, or subsequent, master's degree, please contact the Office of Graduate Studies and Research for additional information. No courses applied toward one degree may be applied toward another degree at the graduate level.

Graduate Student Advisement

Professional academic counseling for students is handled through your major department after you have received formal acceptance through the Graduate School. This method of advisement ensures that you will receive sound academic counseling from faculty in your chosen field of study. A degree plan will be developed for you, and subsequent changes on the official degree outline must be requested through your major department and coordinated with the Office of Graduate Studies and Research.

Registration and Course Credit

Registration

The Office of Graduate Studies and Research will notify you officially by mail regarding your admission. Since applications are for specific semesters, you should notify the Office of Graduate Studies and Research as soon as possible if you will not be enrolling for the semester you were accepted.

Registration in the Graduate School beyond the first semester depends on satisfactory progress in fulfilling any admission conditions that may have been imposed and maintaining satisfactory academic progress.

Registration schedules are published in advance of each semester. You may obtain information regarding registration each semester from the Office of Graduate Studies and Research or the Office of the Registrar. Off-campus registration information is available in the respective departmental offices.

Adds and Drops

You may drop courses and receive no grade through the fifth week of a regular semester or the second week of a summer session. If you drop a course after these time limits, you will receive a "W" in the course if your professor decides that you are passing the course. If you are not passing the course, a grade of "F" will be given for the course dropped.

The deadlines for dropping courses are two weeks prior to final examinations during a regular semester and one week before final examinations in the summer sessions.

You must contact the Office of the Registrar regarding adding/dropping courses. Add/Drop dates are published each semester in the official University Calendar.

Course Load and Overloads

At the graduate level, the full-time course load during a long semester is 9 semester hours; the maximum load is 15 hours. The full-time course load during each summer session is 3 graduate-level hours; the maximum load is 6 hours. (Note: Fewer hours may be certified as full-time for the thesis course).

An international student must register as a full-time student each long semester (fall and/or spring). As a graduate student, an international student must carry a minimum of 9 semester graduate level credit hours, as required by Federal law, to be considered full-time.

Only the Dean of Graduate Studies and Research may authorize an overload. To request an overload, you must submit a written request to the Dean of Graduate Studies
and Research at least 3 days before registration. The request must be accompanied by a written endorsement from the Chair of the academic department. No overloads exceeding 15 semester hours total can be granted during the entire 10-12 week summer period.

An employed person who works one-quarter time may take up to 3 substantive courses; those who work half-time may take up to 2 substantive courses; all others may take only 1 substantive course each long semester. The permissible load of assistant instructors and other part-time employees of the University will be determined by the department or operating unit.

Teachers who are employed full-time in the public schools must have the approval of their employer to enroll for more than 3 semester hours during a long semester or for more than 6 hours during each summer session.

Certification and measurement of graduate courses for graduate students are evaluated as follows:

<table>
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<th>Fall and Spring Semesters</th>
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<td>9</td>
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<td>Less than 3</td>
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<tr>
<th>Six-Week Summer Sessions</th>
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<tr>
<td>Hours</td>
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<table>
<thead>
<tr>
<th>Off-Campus 8-Week Terms</th>
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<tbody>
<tr>
<td>Fall, Spring, and Summer</td>
</tr>
<tr>
<td>Hours</td>
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<td>4</td>
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*Fewer hours may be certified as full-time for thesis courses or other in absentia research when the credits earned do not reflect the pursuit required.

**Thesis courses (5399/5699) can not be scheduled to extend beyond the normal 6-week summer session.

Auditing a Course

No course taken on an audit basis may receive class credit. If you wish to audit a course, you must first obtain permission from the class instructor and from the Chair of the department. All fees charged for an audit course will be the same as if the course were taken from credit.

Withdrawal

You must contact the Office of the University Registrar in person to officially withdraw from the University. In certain cases, however, the Registrar may accept withdrawal by letter or telephone. Students living in University residence halls must also contact the Residential Living Office in person to withdraw.
Course Level

All courses required for the master's degrees offered at Southwest Texas State University should be at the 5000 level or above. In exceptional cases, with the prior written approval of your graduate adviser and the Dean of Graduate Studies and Research, up to 9 semester hours of upper-division undergraduate level work (3000/4000) may be applied toward your degree requirements. Graduate students enrolled in undergraduate courses for graduate credit will be required to meet higher standards of performance, both quantitatively and qualitatively, than are required for undergraduates.

At least one-half of the hours earned for a major, minor, or a cognate area must be numbered 5000 or above for each.

Degree Outline

In the semester that you are admitted to graduate degree study, you must confer with your graduate adviser and plan a degree outline. This proposed outline is then submitted by the department to the Office of Graduate Studies and Research for approval and finalizing. A copy of the official degree outline is made for you, and you will receive written notification from the Office of Graduate Studies and Research when the outline has been prepared. The outline should be used in determining which courses to choose in each registration.

You are not officially in the Graduate School of Southwest Texas State University until you have signed your official degree outline. Any course taken prior to the signing of the official degree outline is taken at your own risk. Any changes in the degree outline must be made by means of official written notification on the approved forms by the departmental graduate adviser to the Office of Graduate Studies and Research.

Transfer Credit

A maximum of 6 semester hours of credit earned at another institution may be accepted on transfer and applied toward the master's degree provided that the credit was earned in graduate courses completed in residence at the accredited institution, that the courses are appropriate to your degree program at SWT, and that:

1. If the credits were earned prior to your admission to the SWT Graduate School, the credits were earned while you were enrolled under a graduate degree program at that institution. You are to provide the SWT Graduate School with written verification of this.

2. OR, if the credits are to be earned after your admission to the SWT Graduate School, prior written approval of the enrollment has been given by the SWT Dean of Graduate Studies and Research and a Letter of Good Standing has been sent to the other institution by the SWT Dean of Graduate Studies and Research prior to your enrollment in the course(s) to be transferred.

Transfer work will be accepted only if it bears a letter grade of "B" or higher, or a numerical equivalent. A grade of "Credit," "Pass," "Satisfactory," etc., is unacceptable. Transfer week will not be accepted for graduate degree credit from another institution if such courses are designated as "non-degree," "background," "preparatory," etc.

Undergraduate courses taken to absolve background requirements will be accepted on transfer only if such courses are of the same level as those specified on the official degree outline. You should obtain a Letter of Good Standing from the Dean of Graduate Studies and Research to take background courses at another institution.
Letter of Good Standing

If you plan to take courses on another campus as part of your graduate program with Southwest Texas State University, you should initiate a request for a Letter of Good Standing well in advance of the time of the planned enrollment, since transfer credit can not be permitted unless a Letter of Good Standing has been issued prior to your enrollment in the course(s) to be transferred. If you are currently working toward a master's degree at SWT and wish to take a course at another accredited university to apply toward your degree at SWT, you will need to:

1. Request permission of your departmental graduate adviser to take a course elsewhere.
2. Have your graduate adviser submit a request to the Dean of Graduate Studies and Research so that the Dean can issue an official Letter of Good Standing. The request from the adviser should identify the course(s) by name and number and should state what semester(s) and where you will be taking the course(s). If the Dean of Graduate Studies and Research approves the request, a Letter of Good Standing is sent by the Dean of Graduate Studies and Research to the university where you will be enrolling.
3. Have an official transcript of your work forwarded, as soon as you complete the course(s), to the SWT Office of Graduate Studies and Research.

Work/Life-Experience Credit

In the Interdisciplinary Studies program, you may petition to receive up to 9 semester hours credit for work/life-experience. An evaluation board evaluates the proper documentation on an individual basis.

Extension Credit

Extension classes are client-funded courses which are offered both on and off the SWT campus. All courses are from the regular SWT curriculum and are offered when necessary to meet public demand. Registration for an extension class is handled through the Office of Extension and does not constitute acceptance as a regular student at SWT. Extension work which is accredited toward a graduate degree must be approved by the department Chair and the Dean of Graduate Studies and Research.

A maximum of 12 semester hours of graduate credit may be earned in extension courses offered by Southwest Texas State University.

Up to 3 semester hours, of the total allowable 6 hours of transfer credit, can be earned through extension courses at another accredited institution.

Correspondence Study

Correspondence courses can not be used toward a graduate degree at SWT.

Continuing Education Study

Continuing Education courses are non-credit hour classes and do not require acceptance through the Graduate School. They do not apply toward a degree program at SWT, and they are not considered in application for regular admission.

Correct Registration

You are required to use your correct legal name and social security number on all registration materials. The University assumes no responsibility when different names or social security numbers or a variation of names and numbers are used by a student.
Grading Policies and Academic Requirements

Residence Requirement

In general, 24 semester hours of graduate work should be completed in residence at Southwest Texas State University.

Course Numbers

Courses numbered 5000 and above are open to graduate students. In rare instances, a graduating senior may be allowed to take a 5000-level course only if the equivalent is not offered at the undergraduate level during the student's final semester, and provided the course is a requirement for graduation.

The second digit of the course number identifies how many semester hours of credit will be received for the course. For example, a course numbered 5300 would carry 3 semester hours of credit. Numbers in parenthesis following a course title indicate the clock hours per week spent in lecture and laboratory, respectively.

The first four digits in course numbers represent individual courses. When a fifth digit is used, it represents an area of concentration within a more general course and is intended to provide a more accurate transcript of work in a course.

Course Symbols

Grades are indicated by the following symbols: "A", excellent work; "B", good; "C", average; "D", passing; "F", failure; "I", incomplete; "W", withdrawn passing; "F", withdrawn failing. A grade of "P", which is temporary and non-punitive, may be given in selected courses where the required clock hours necessary for completion extend beyond the regular semester or session. A grade of "X" may be assessed when you leave a class or the University under extremely unusual circumstance, and fail, through no fault of your own, to officially withdraw. A grade of "CR" is assessed when credit only is given for the course, as in the case of the thesis course upon completion of the thesis.

If any course work is incomplete during any semester, the work must be completed by an indicated deadline arranged between you and your professor. The grade "I" is assessed for one reason only: Student failure to complete a vital portion (final examination, paper, etc.) of a course because of a situation beyond the student's control.

Change of Grade

Grades in individual courses may be changed when the involved faculty member certifies to the University Registrar that an error has been made in computing the original grade. The grade change must be approved by the Chair of the department and the Dean of the School or the Dean of Graduate Studies and Research.

Grade-Point Average (Four-Point System)

The grade-point average (GPA) is the number of grade points earned divided by the number of semester hours attempted. Semester grade symbols have the following values:

A = 4 points
B = 3 points
C = 2 points
D = 1 point
F = 0 points
Satisfactory Academic Progress

You are required to maintain a 3.0 grade-point average in all 4000, 5000, and 6000 level courses each semester you are enrolled. If your grade-point average falls below 3.0 in any semester, you will be placed on warning status for your next semester or summer session of enrollment and your graduate adviser will be notified. If you do not achieve a 3.0 GPA during the semester of your warning status, you will be suspended from the Graduate School. A student placed on suspension must petition the graduate adviser and the Dean of Graduate Studies and Research for permission to re-enroll.

You may not change graduate programs during any semester you are placed on warning status. Only grades earned in graduate-degree status at SWT or as a certification student at SWT will be used to compute the grade-point average. “I” grades will not be counted.

Class Attendance

It is the policy of the University to encourage regular, punctual attendance of all classes. The University recognizes that the absolute necessity of regular attendance varies from department to department, from course to course, and from student to student. The University has no mandatory class attendance requirements except:

1. Each faculty member will inform students of the absence policy of the course at the initial class meeting.
2. Students will insure that they are aware of the absence policy for each course in which they are enrolled.

Class Credit Requirements

You must be in attendance in class, fulfill the course requirements, and be evaluated by the course instructor in order to receive course credit.

You must be duly enrolled in the course during the semester or summer session in which you receive credit for that class.

You may not enroll in a class so as to receive credit for class work performed in a preceding semester or summer session, nor may you enroll in a class so as to receive credit for work performed at another college or university.

These requirements for class credits do not affect enrollment for thesis or independent study or credit awarded on the recommendation of the Work/Life-Experience Evaluation Board.
Degree Information

Background Course Requirements

Generally, a background of at least 24 semester hours, including 12 advanced, is required for the graduate major; and 18 hours, including 6 advanced, are required for the graduate minor. Exceptions in background requirements may vary in split minors and in requirements for minors in elementary education. You should refer to the appropriate departmental pages in this bulletin for specifics.

Time Limit

A program leading to the master's degree must be completed within six years from the date of your initial enrollment for graduate courses. No credit will be applied toward the master's degree for courses completed more than six years before the date on which the degree is to be conferred. This time limit applies toward credit earned at SWT as well as credit transferred to SWT from other accredited institutions. An extension of time may be given to students who enter military service.

You will graduate under the current catalog at the time of your graduation unless you inform the Dean of Graduate Studies and Research in writing that you wish to graduate under the catalog you entered under, provided the degree requirements are unchanged and that the catalog is no more than six years old.

Hour Requirements

The minimum number of graduate-level semester credit hours required for the master's degree is 30; the maximum is 50. If you are also seeking certification, you may be required to complete additional hours.

Application for the Degree

You must indicate your intent to graduate during registration for your last semester. The intent to graduate must be indicated on your registration form, and you pay a $12.00 diploma fee in addition to your usual registration fees. You must complete your degree application in the Office of Graduate Studies and Research within the period announced in the University Calendar. Failure to follow these steps or apply for graduation on time may require you to accept a statement of completion instead of a diploma, and graduate the following semester. You must submit a written request to the Dean of Graduate Studies and Research to issue a Letter of Completion.

If you fail to complete the requirements in time for your planned graduation, you must re-apply for graduation by following the same procedure and paying a $3.00 fee for changing the diploma insert. Re-application for the degree must be filed in the Office of Graduate Studies and Research within the period announced in the University Calendar.

Grade-Point Requirements for Graduation

To be eligible for graduation, you must have a GPA of 3.0 or better in the major and in the minor.

Incomplete grades must be cleared through the Office of Graduate Studies and Research at least ten days before the commencement at which the degree is to be conferred.

It is your responsibility to ensure that all graduation requirements have been met.
Comprehensive Examination

All candidates for the master's degree must pass a comprehensive examination, either written or oral or both, covering at least the field of concentration and the thesis if a thesis is written. This examination may not be taken until you have completed at least 18 semester hours of graduate degree credit and may not be taken before the final term or semester if you have a grade deficiency. Arrangements for the examination may be made with your graduate advisor or the department Chair.

The results of the comprehensive examination must be filed in the Office of Graduate Studies and Research at least ten days before the commencement at which the degree is to be conferred.

Thesis Requirements

If you elect to follow the thesis option for your degree, a committee to direct the written thesis will be assigned by your department Chair, in conference with you. The thesis must demonstrate your capacity for research and independent thought. Preparation of your thesis must be in conformity with Kate L. Turabian’s, *A Manual for Writers*, or in conformity with the specific guidelines in your major department.

**Thesis Proposal.** You must submit an official “Proposed Research” form in triplicate to your thesis committee. Copies of this thesis proposal form may be obtained from the Office of Graduate Studies and Research. After obtaining your committee members’ signatures, you must submit the forms in triplicate to the Dean of Graduate Studies and Research for approval before proceeding with research on your thesis.

**Thesis Enrollment and Credit.** Enrollment for the thesis will be recorded as course number 5699, or 5399, in the field in which the subject matter of the thesis falls, e.g., Education 5699, English 5699, etc. If you do not complete the thesis in a summer session or in a regular semester in which you are enrolled for thesis, then you will receive a grade of “P”.

You may enroll for either 3 or 6 hours of credit in the thesis course in any semester or summer session, according to the availability of your departmental course offerings. A maximum total of 6 semester hours credit will be awarded only after the thesis is bound and filed in the library. **You will be required to enroll and pay the fee for at least 3 hours of the thesis course during any semester or term during which you desire thesis supervision or guidance.** Preliminary discussions regarding the selection of a topic and assignment to a supervisor will not require enrollment for the thesis course. Failure to register for the thesis course during a semester in which supervision is received may result in postponement of graduation.

All candidates for graduate degrees who have elected the thesis option must be registered for the thesis course during the semester or summer session in which thesis supervision is received and the degree is conferred. The only exception to this rule will be when copies of the thesis are delivered for binding prior to the day of graduation, but too late for the candidate's participation in graduation ceremonies, and all other graduation requirements have been met. In this case, and this case only, the candidate need not enroll in thesis the succeeding semester.

**Thesis Deadline Dates.** The completed thesis must be submitted to the Chair of the thesis committee no later than 45 days before the date of the commencement at which the degree is to be conferred and must be deposited with the Dean of Graduate Studies and Research for final approval not later than 30 days before the date of the commencement at which the degree is to be conferred.
Thesis Copies. Two copies suitable for binding must be delivered to the Dean of Graduate Studies and Research before the week of graduation. After appropriate signatures (committee members and graduate dean) have been obtained, these two copies of the thesis must be deposited in the Learning Resource Center (University Library), and a fee to cover the cost of binding must be paid to the Library before the degree is conferred. Failure to comply with this regulation will delay graduation until the following semester or whenever you complete your thesis requirements.

Letter of Completion. Even though you may have missed the deadline for submission of the thesis and thus be unable to participate in graduation ceremonies at the end of the semester or term in which you had planned to graduate, it still may be possible to receive a Letter of Completion. A Letter of Completion is issued by the Dean of Graduate Studies and Research and states that you have completed all requirements for the degree.

Recommendation for the Degree

Upon the completion of all requirements for the master's degree, and with the approval of the department concerned, candidates are certified for graduation by the Dean of Graduate Studies and Research. Degrees are conferred publicly at the close of the fall semester, the spring semester, and the second summer session.
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<th>MINIMUM HOURS</th>
<th>THESIS</th>
<th>SPECIAL CHARACTERISTICS</th>
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¹The Master of Science is a degree of the School of Science. As such, any student, majoring in a discipline within that School may elect to use any minor within that School.
Certification Instructions

Administrator's Certificate

If you are seeking certification only (rather than seeking a graduate degree) and you hold at least a baccalaureate degree, you may gain admission as a "Post-Graduate."

Regulations adopted in 1972 provide for a 45-semester hour program for a "Mid-Management" certificate (including the principalship). A 60-semester hour program is required for certification as a superintendent. You should consult with the Director of Professional Certificates, Department of Education, for details.

Admission to administrative programs will be on the recommendation of a screening committee. You will be judged on your previous academic record, work experience record, Graduate Record Examination (General) score, and on the basis of a formal interview.

Post-Graduates from Texas Colleges or Universities

You must apply for admission through the Office of Graduate Studies and Research as either:

a. A regular degree-seeking student, or,
b. A Post-Graduate, non-degree credit student.

You will also need to apply to the Certification Officer at SWT for a deficiency plan. Upon successful completion of your deficiencies, you must apply for certification in the Certification Office.

Post-Graduates from Colleges or Universities Outside the State of Texas

If you hold a valid teacher certificate from another state, you must apply to the Division of Teacher Certification of the Texas Education Agency for either a certificate or a deficiency plan. Maps and addresses are available in the Certification Office.

You must submit the Texas Education Agency deficiency plan to the Certification Officer of Southwest Texas State University. The Certification Officer will equate the Texas Education Agency requirements into SWT course equivalents for you.

If you do not currently hold a valid teacher certificate, you should submit an official transcript of all college work, along with a request for a deficiency plan, to the Certification Officer.

These requirements for applicants from out-of-state are in addition to fulfilling the regular admission requirements to SWT as a Post-Graduate.

Fees and Expenses

Deposits and Registration Fees

The University reserves the right to change fees in keeping with the acts of the Texas Legislature and the Board of Regents, Texas State University System.

The payment of all fees entitles you to admission to classes, admission to auditorium and athletic attractions, subscriptions to The University Star, use of the Student Center facilities, use of the health services, use of Sewell Park facilities and group use of the Wimberley Camp. These fees also help provide funds for the Associated Students, band, choir, dramatics, debate, and other student activities.

All fees herewith are subject to change.

Please consult the following official fee charts for exact costs in all categories.
General Property Deposit

You are required to make a General Property Deposit of $10.00 which must remain with the University through your career here except as noted below. All charges for property losses, damages, breakages, or violations of rules of the University must be settled promptly. However, any unpaid current charges will be deducted from the deposit before a refund is made.

Required Registration Fees

Residents of Texas

Fall and Spring Semesters of the Long Term
1983-1984 (per semester)

<table>
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<tr>
<th>Hours</th>
<th>Tuition</th>
<th>Student Service Fee</th>
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*Add $4.00 for tuition for each hour over 20; Student Service Fee, Building Use Fee, Student Center Fee, and Bus Fee remain the same.

Summer Term, 1984 (per session)

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<th>Hours</th>
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<th>Building Use Fee</th>
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*Add $4.00 for tuition for each hour over 7.
**Add $6.00 for Building Use Fee for each hour over 7 (maximum $45.00); Student Service Fee, Student Center Fee, and Bus Fee remain the same.
Non-Resident Students, United States Citizens, and International Students

Fall and Spring Semesters of the Long Term
1983-1984 (per semester)

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*Add $40.00 for tuition for each hour over 20; Student Service Fee, Building Use Fee, Student Center Fee, and Bus Fee remain the same.

Summer Term, 1984 (per session)

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<th>Hours</th>
<th>Tuition</th>
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<th>Bus Fee</th>
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*Add $40.00 for tuition for each hour over 7.
**Add $6.00 for Building Use Fee for each hour over 7 (maximum $45.00); Student Service Fee, Student Center Fee, and Bus Fee remain the same.

Required Registration Fees, 1984-85

The required registration fees for the school year 1984-85 will be available at a later date in the official SWT Schedule of Classes and in the 1983-85 Graduate Bulletin Supplement when published.
Fees and Expenses

Fees for Special Courses
(in addition to registration fees)

Piano, organ, voice, band or orchestral instruments:
- Two (one-half hour) lessons per week: $35.00 per semester
- One (one-half hour) lesson per week: 18.00 per semester
- Class Piano 1108, 1110, 1112, 1114: 10.00 per semester
- Music Practice Fee: 2.00 per semester

Scattered Practice Teaching, Education 4382, 4383, 4384
(payable in full upon initial registration one time only)
- Off-campus: 75.00

Internship Practicum, Education 5389
(payable in full upon initial registration one time only)
- Off-campus: 75.00

Internship Practicum, Special Education 5389
(payable in full upon initial registration one time only)
- Off-campus: 75.00

Laboratory Fees:
- Agriculture 4300, 4303: $2.00 per semester
- Agriculture 2379, 3379, 4302, 4361: 3.00 per semester
- Agriculture 3304: 4.00 per semester
- Agriculture 2373, 2374, 3375, 4374: 5.00 per semester
- Agriculture 2345: 8.00 per semester
- Biology 5699: 4.00 per semester

Biology 1410, 1420, 2340, 2350, 2430, 2440, 3320, 3322, 3360,
3365, 3410, 3440, 3442, 3450, 3460, 3470, 3480, 3490,
3495, 4299, 4302, 4303, 4305, 4310, 4320, 4321, 4322,
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5335, 5336, 5340, 5345, 5355, 5360, 5361, 5390, 5399,
5411, 5412, 5413, 5415, 5425, 5440, 5445, 5454, 5463,
5465, 5470, 5480: 2.00 per semester

Chemistry 5699: 4.00 per semester

Chemistry 1410, 1420, 1430, 2130, 2410, 2420, 2450, 3245, 3410,
4275, 4299, 4336, 4337, 4412, 4430, 4440, 4465, 5275,
5336, 5337, 5399, 5412 (not including breakage): 2.00 per semester

Education 4303, 5305, 5357: 2.00 per semester

General Science 3310, 3320, 4302, 4303: 2.00 per semester

Geography 1414, 1415, 2408, 3411, 3416, 4412, 4430: 5.00 per semester

Home Economics 1360, 2360, 3360: 5.00 per semester

Industrial Arts 5396: 6.00 per semester

Physics 4336, 4337, 5336, 5337: 2.00 per semester

Technology 1320, 1330, 2310, 2320, 2344, 2350, 2365, 2370,
3313, 3320, 3350, 3365, 3370, 3380, 3384, 3386, 4310,
4313, 4330, 4344, 4350, 4360, 4362, 4371, 4372, 4373,
4374, 4375, 4385, 4387, 4393: 6.00 per semester

Technology 1413, 1450: 8.00 per semester

Certificate and Diploma Fees

Certificate Fee (payable when applying for certificate)
- Provisional (permanent): $10.00
- Professional: 10.00

Diploma Fee: 12.00

Diploma Insert Fee (re-application for graduation): 3.00
Additional Fees and Information

Admission/Evaluation Fee for International Students

A non-refundable admission/evaluation fee of $25.00 (U.S. currency) must be submitted, along with the Application for Admission to Graduate School, by all applicants who hold or will be holding a non-immigrant visa while in the U.S. and by all applicants who are considered for admission on the basis of foreign credentials. No application will be considered until the necessary fee is paid.

Auditing Fees

Where auditing of a course is permitted, all fees will be the same as if the course were taken for credit.

Concurrent Enrollment At Another Public Institution of Higher Education

To be eligible for the provisions of Senate Bill 250, "Tuition Limit in Cases of Concurrent Enrollment", you must present to the representative of the Director of Accounting at the "Tuition Adjustment Table" on the day you register: Evidence of enrollment, number of semester hours enrolled, and receipt showing total tuition and other fees paid at another public institution of higher education.

Extension Instruction

The fee for extension instruction is $35.00 per semester credit hour for undergraduate studies or $100.00 per three semester credit hours, and $40.00 per semester credit hour for graduate studies or $110.00 per three semester credit hours. The audit fee for extension courses is the same as if the courses were taken for credit.

Fee Reduction

A master's degree candidate for graduation may be eligible for fee reduction under V.T.C.A., Education Code, Section 54.051, if the student is registered for thesis credit only and provided such credit is the final credit hour requirement for the degree in progress.

Late Fee for Student Health Center

A $5.00 late fee will be charged at the Student Health Center for each emergency account receivable that is not paid within ten class days after medical treatment has been rendered.

Laundry Service Fees for Physical Education Uniforms

The following fees are required for students enrolled in physical education courses which require uniforms. Students taking more than one uniform-required course will pay only one fee.

- $10.00 per long term
- 5.00 per summer session

Fees for individuals not enrolled in physical education courses who wish to use the University physical education uniforms are as follows:

- Students .................................................. $10.00 per long term
  5.00 per summer session

- Faculty, staff, or spouse of faculty or staff. ................................. 40.00 for twelve months
  15.00 per long term
  5.00 per summer session

- Children of faculty or staff
  18 years of age or younger ....................... 10.00 per long term
  5.00 per summer session
Motor Vehicle Registration Fees

Every faculty member, student, or employee of the University who operates or parks one or more vehicles on the campus must register each vehicle during registration at the beginning of the fall semester of each year, or as soon as each vehicle is brought on campus, with the Office of Permits and Identification. A registration fee will be charged according to the schedule listed below.

Motor Vehicles, 12 months (Fall, Spring, and Summer) .......................................................... $15.00
Motor Vehicles, Spring and Summer Only ..................................................................................... 10.00
Motor Vehicles, Fall Only ....................................................................................................................... 10.00
Motor Vehicles, Summer Only ............................................................................................................... 5.00
Motor Vehicles, Commuter and Riverside Apartments, 12 months (Fall, Spring, and Summer) .......................................................... 5.00
Motor Vehicles, Commuter and Riverside Apartments (Spring and Summer Only) .................................................. 3.00
Motor Vehicles, Commuter and Riverside Apartments (Fall Only) .............................................. 3.00
Motorcycles, 12 months (Fall, Spring, and Summer) ................................................................ 3.00
Motorcycles, Fall Only ............................................................................................................................. 2.00
Motorcycles, Spring and Summer ...................................................................................................... 2.00
Motorcycles, Summer Only .................................................................................................................... 2.00
Motor Vehicles, Retired Faculty and Staff ....................................................................................... 5.00

The official traffic regulations will be those published by the University each year, entitled "Traffic-Parking Regulations".

Off-Campus Courses

As an off-campus student, you are required to pay tuition and fees at the same rate as on-campus students.

Payment of Fees

All fees and deposits are payable at the time of registration, and you are not registered until your fees are paid. Payment may be made by check or money order payable to Southwest Texas State University. If checks are returned unpaid for any reason other than the admitted error of the bank, you must pay in cash immediately, and a $10.00 service fee will be charged for each returned check. If your check has been dishonored, you may be required to pay in cash thereupon.

Loose coins in excess of the appropriate denomination required by banks are not acceptable for payment of any fee unless they are wrapped in appropriate denominational coin wrappers and signed by the payer.

Residency for Tuition Purposes

The Texas Legislature and the Coordinating Board, Texas College and University System, have established guidelines for determining Texas resident and non-resident classifications and the corresponding tuition rates. Texas residency for tuition purposes is generally obtained by working in Texas for twelve months immediately prior to enrollment in any college or university, or by being a dependent of a Texas resident. Full regulations are available at the Office of Admissions.

If you have lived outside Texas or have a possibility of being a non-resident, your residency is coded accordingly. Upon receipt of a completed residency questionnaire, a determination of your eligibility to pay in-state tuition will be finalized.

It is your responsibility to insure that the application is properly coded for tuition purposes. Any change in residency status must be reported to the Office of Graduate Studies and Research.
Rules Regarding Fees

Rules and regulations governing student residency classification is available in the Office of Admissions; and if you are uncertain of your status, you are encouraged to obtain such rules and regulations and to seek a determination of your status through that office.

Schedule Change

A fee of $2.00 will be charged for each change in your schedule after that schedule has been filed, except when such change is dictated by circumstances deemed by the University Registrar to be beyond your control.

Students' Financial Obligations

You are expected to meet financial obligations to the University within the designated time allowed. Registration fees are payable at the time of registration, and you are not entitled to enter class or laboratory until your fees and deposits have been paid. Other charges are due at registration or within ten days after a bill is rendered by the University, or according to the special payment instructions that may be printed on your bill. Failure to pay the amount owed in the allowed time may result in any or all of the following: 1) dismissal from the University, 2) withholding of future registration privileges, 3) withholding the issuance of an official certified transcript, 4) withholding the conferring of a degree.

Tuition and Fees for Special Summer Course Offerings Other Than the Traditional Six-Week Session

The tuition and fees semester credit hour rate for any course offering of less than six weeks duration will be the same as the tuition and fees semester credit hour rate for the traditional six-week session; and, tuition and fees semester credit hour rate for any term of more than six weeks duration will be the same as the tuition and fees semester credit hour rate for a regular semester of the school year.
Refund of Fees

Refund of Registration Fees

If you have paid your registration fees and then officially withdraw by submitting a withdrawal card and registration receipt to the Cashier in the Office of the Director of Accounting, you are entitled to a refund of tuition and fees as follows:

Regular Long Semester
* Prior to the first regularly scheduled class day ....................... 100%
  During the first five class days ............................................. 80%
  During the second five class days ........................................ 70%
  During the third five class days .......................................... 50%
  During the fourth five class days ....................................... 25%
  After the fourth five class days ........................................ None

* A matriculation fee of $15.00 will be assessed any withdrawals prior to the first day of classes.

Summer Session
** Prior to the first regularly scheduled class day .................... 100%
  During the first, second, or third class day .......................... 80%
  During the fourth, fifth, or sixth class day ......................... 50%
  Seventh day of class and thereafter ................................ None

** A matriculation fee of $7.50 will be assessed any withdrawals prior to the first day of classes.

Should you reduce your semester hour course load by officially dropping a course or courses, the following refund rates will apply, provided you remain enrolled at Southwest Texas State University:

Regular Long Semester
  During the first twelve class days ....................................... 100%
  After the twelfth class day ............................................. None

Summer Session
  During the first four class days ....................................... 100%
  After the fourth class day ............................................. None

No refunds will be made when the amount is less than $2.00. An immediate refund will not be made at the time you withdraw or reduce your hours during a semester; but upon request, a check covering all refunds due will be mailed within approximately thirty days to the address you leave at the Cashier’s window, Office of the Director of Accounting.

Refund of General Property Deposit

The General Property Deposit, less charges, will be returned to you at the end of your career as a student, provided, however, that any General Property Deposit which remains without call for refund for a period of four years from the date of last attendance at this University shall be forfeited and the deposit become a part of and operative to the permanent use and purpose of the University Student Deposit Fund.
Refunds in the Event of Death

In the event a student dies, and a refund of tuition, fees, room and board, deposits, or other monies is due the estate of the deceased student, the University will presume that the person most recently indicated by the student as next-of-kin on official University records is to be the recipient of all refunds. The University will, as soon as practicable after the death of the student, pay all refunds due to the designated next-of-kin unless the student has specifically designated in writing to the Registrar the name and address of another person to be the recipient of such refunds.

Refund of Motor Vehicle Registration Fees

The refund schedule for an unused parking registration decal is as follows:

**Fall or Spring Semesters**
- Prior to first regularly scheduled class day: 100%
- During first five class days: 80%
- During second five class days: 70%
- During third five class days: 50%
- During fourth five class days: 25%
- After fourth five class days: None

**Summer Sessions**
- Prior to first regularly scheduled class day: 100%
- During first, second, or third class day: 80%
- During fourth, fifth, or sixth class day: 50%
- Seventh day of class and thereafter: None

Financial Assistance

Financial Assistance

Federal regulations require that you be making satisfactory progress before you may receive financial assistance. In order to comply with these regulations, the following definition has been adopted by Southwest Texas University, effective summer, 1978.

For purposes of awarding financial assistance only, satisfactory academic progress will be determined after you have been enrolled for one semester at Southwest Texas State University and every semester thereafter. A graduate student is considered to be making satisfactory academic progress if the following conditions are met:

1. A minimum graduate GPA of 3.00 is maintained overall and in the major field, including transfer of graduate credit; and
2. A minimum of 6 semester graduate credit hours per semester and an average of 9 semester graduate credit hours over all semesters enrolled at Southwest Texas State University is satisfactorily completed.

Access to a post-secondary education is not limited by the ability of a student and/or parent to provide for necessary educational expenses. Southwest Texas State University participates in a variety of federal, state, and local financial aids programs which may assist if you do not otherwise have sufficient funds available to defray educational costs.

To be eligible for financial assistance, you must be enrolled at least half-time in a degree-granting course of study, in good standing, and making satisfactory academic progress, and not in default or delinquent on any loan plan with the University, State, or Federal Government. You must not owe a refund on grants previously received for attendance at Southwest Texas State University under the Pell (Basic) Grant, the Supplemental Education Opportunity Grant, or the State Student Incentive Grant Program.
The Office of Student Financial Assistance awards aid on the basis of financial need, starting with the highest need factors and awarding aid until funds are depleted. Meeting the application priority dates is important as there is a limited amount of aid to be distributed to students, and those applications completed by the priority dates will be considered first. To ensure priority consideration, applications and all required documentation must be on file in the Office of Student Financial Assistance by the following priority application dates:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Priority Date</th>
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<tbody>
<tr>
<td>Fall Semester</td>
<td>May 1</td>
</tr>
<tr>
<td>Spring Semester</td>
<td>October 15</td>
</tr>
<tr>
<td>Summer</td>
<td>March 15</td>
</tr>
</tbody>
</table>

These are "priority dates" and not deadlines. However, if you apply and/or complete your financial aid records after these dates, you face the increased possibility that funds will not be available.

The Director of Student Financial Assistance and members of the staff may be contacted by calling (512) 245-2315 or visiting the office located in the J.C. Kellam Building, Room 228, Monday through Friday.

**Veteran's Benefits**

If you plan to attend Southwest Texas State University while receiving educational assistance under one of the public laws for veterans and/or their dependents, you must contact the SWT Office of Veterans Affairs (OVA) to complete the required application.

New students applying under Veterans Administration laws for the first time should provide Copy 4 of DD Form 214, Report of Separation from Active Duty, which will be reproduced and returned by the VA. Reproduced copies of marriage, divorce, and birth certificates are also necessary to establish full entitlement.

Students transferring from other institutions who have previously used VA educational entitlements, and active duty military members, are exempt from this requirement.

Benefit payments are made at the **end of each month** or fraction thereof in which you are in school. You should bring sufficient funds to defray the initial cost of tuition and fees and living expenses for approximately three months. After adjudication, there is usually a **delay of 8 to 10 weeks** in receiving the first payment from the Veterans Administration.

As a graduate student receiving veteran benefits, you must file with OVA an official master's degree outline, a certification deficiency plan, or other similar official documentation showing an ultimate objective and the requirements needed to accomplish that goal.

It is your responsibility to notify the OVA of any adds, drops, course or program changes, etc.
School of Applied Arts and Technology

Department of Agriculture

Graduate Faculty

Carson, Charles Dee, Associate Professor of Agriculture. B.S., M.S., Ph.D., Texas A&M University.

Farmer, Leslie Edgar, Assistant Professor of Agriculture. B.S., Stephen F. Austin State University; M.S., Tarleton State University; Ed.D., Oklahoma State University.

Helm, Raymond Edgar, Associate Professor of Agriculture. B.S., M.S., Ph.D., Texas A&M University.

Knotts, Clifton Don, Professor of Agriculture and Supervisor of Student Teaching. B.S., M.Ed., Sam Houston State University; Ph.D., Texas A&M University.

Miller, Roy V., Jr., Professor of Agriculture and Chair of the Department of Agriculture. B.S., Texas Tech University; M.S., Ph.D., Colorado State University.

Rydl, Glen Myrlin, Professor of Agriculture. B.S., M.S., Ph.D., Texas A&M University.

Shell, Lon Ray, Professor of Agriculture. B.S., M.S., Ed.D., Oklahoma State University.

Degree Programs

The Department of Agriculture offers a 36-hour Master of Education degree with a major in Agricultural Education and an integrated minor in Agriculture and closely related fields. The degree is designed for students who are practicing professionals in vocational agriculture, agriculture extension education, governmental agriculture categories, and other professional vocational education programs. The major in Agricultural Education consists of 21 hours selected from the available Agricultural Education courses. The 15-hour integrated minor (Scientific Agriculture — Supportive courses) has selected support courses available in Agriculture, Business Administration, Biology, Education, English, Psychology, Special Education, and Speech Communication. The supportive courses are to be chosen with the advice and consent of the graduate adviser.

Courses Offered

Agriculture

5315 Fertilizers and Soil Productivity. (2-2) The principles of fertilizer use for maintenance of soil productivity. Fundamentals of crop-producing powers of soils will be discussed, as well as proper fertilizer use to secure maximum economic yields. Also, the technology of fertilizer preparation and proper application for greatest economic returns.

5321 Advanced Range Management. (2-2) Advanced problems in range management such as range and ranch economics, control, and proper stocking.

5322 Farm Irrigation. (2-2) Engineering principles of irrigation. Sources of water, types of irrigation systems, surface and subsurface systems, measurement and distribution of water, and determining the cost of irrigation.

Prerequisite: Agriculture 3354, or consent of the professor.

5347 Conservation of the Natural and Agricultural Resources. (3-0) A study of resources related to farm and community life; special emphasis on the conservation of soil, water, forest, range land, wildlife, minerals, health, and safety. Visiting consultants in the above fields will be used.
5360 Advancements in Animal Science. (3-0) Survey of the current knowledge and concepts in animal production including economic considerations and current production problems in breeding and feeding livestock.

*5370 Problems in Technical Agriculture. A conference course. Problems will be selected to meet the needs of the individual student.

5380 Topics in Horticulture Science. (3-0) Study of current principles and practices involved in the production, general care, and maintenance of horticultural plants grown in greenhouses, nurseries, other forcing structures, and in the field.

5426 Classification and Management of Range Soils. (3-2) Classification and management of range soils in Texas. The physical relationships of soil moisture, temperature, penetrability, and aeration to plant growth. Range condition classes, range sites, land classes, and problem areas as they affect management.

Agricultural Education

*5314 Problems in Teaching Vocational Agriculture. The student is given the opportunity to work on problems of special interest and need in teaching high school vocational agriculture.

5318 Administration and Supervision of Vocational Education. (3-0) The administration of comprehensive vocational education programs with emphasis on the operation and implementation of programs governed by state and national laws.

5319 Youth Leadership and Adult Education Methods and Activities. (3-0) The rationale, planning, implementing, conducting, and evaluation of leadership programs for in-school and out-of-school clientele will be analyzed. Attention will be given to special methods used to enhance youth and adult education. Secondary vocational education student organizations and the 4-H Club will also be studied.

5320 History and Principles of Vocational Education. (3-0) Study of history, basic principles, and philosophy of different programs of vocational education existing today.

5321 Cooperative Part-time and Pre-employment Laboratory Training Programs in Vocational Education. (3-0) Establishing and administering cooperative part-time and pre-employment laboratory training in occupations requiring knowledge and skill in vocational and technical subjects. Special emphasis on selecting students, training stations, facilities, employer-employee agreements, supervision, labor laws, training plans, course of study, and teaching techniques.

5330 Vocational Techniques of Research and Analysis. (3-0) Principles and procedures of evaluation used in developing and implementing programs of vocational education will be stressed. The procedure involved in proposal writing will be studied.

5331 Guidance. (3-0) Analysis of occupational and vocational opportunities for vocational students; includes work in interpersonal communications as well as in the techniques of individual and group counseling in guidance. Practice in personality and occupational interest testing.

5335 Curriculum Development of Vocational Programs. (3-0) Principles and practices in developing curricula for different areas of vocational education will be emphasized. The dynamics of cultural and technological changes upon methods of planning and implementing vocational curricula as it relates to the educational needs of vocational youth will be stressed.

5340 Organization and Administration of Agricultural Mechanics. (3-0) Planning, organizing, implementing, and conducting vocational technical laboratory programs will be emphasized. Shop program management functions such as equipment selection, purchasing, maintenance, shop budgets, inventories, and supply needs will be studied. Writing educational specifications in planning for vocational and technical shop facilities will be included.

*May be repeated for additional credit when problem differs.
Department of Criminal Justice

Graduate Faculty

Harrelson, Donald Biggerstaff, Associate Professor of Criminal Justice and Assistant Dean of the Schools of Applied Arts and Technology and Health Professions. B.S., Michigan State University; M.B.A., George Washington University.

Stone, William Edwin, Associate Professor of Criminal Justice. B.S., M.A., Ph.D., Sam Houston State University.

Degree Programs

The Department of Criminal Justice offers no major but participates in two graduate degree programs at Southwest Texas State University: the Master of Public Administration and the Master of Science in Interdisciplinary Studies. The graduate program within the Department of Criminal Justice is designed to assist professionals in assuming program and administrative responsibility in the design and management of an effective, efficient, and humanly responsive criminal justice system. The curriculum provides for the development of skills in criminal justice program planning, implementation, and evaluation to ensure a meaningful contribution to this important area of community and human services.

Courses Offered

5331 Human Factors in Criminal Justice Administration. (3-0) Analysis of the qualitative aspects of the criminal justice system. The organizational dynamics of groups and the group's effect upon the individual working in various criminal justice organizations are studied.

5332 Decision Making in Criminal Justice Organizations. (3-0) An analysis of the quantitative nature of criminal justice organizations with emphasis on the development, analysis, and use of data to be used in problem solving and decision making.

5378 Studies in the Administration of Justice. (3-0) An examination of the criminal justice system. Special topics in the administration of justice, including law enforcement, public safety, corrections, and court processes, will receive major emphasis.

Department of Technology

Graduate Faculty

Ballard, John Roger, Professor of Technology. B.S., M.A., Southwest Texas State University; Ed.D., Texas A&M University.

Habingreither, Robert Bruce, Associate Professor of Technology. B.A., M.A., Montclair State College; Ed.D., West Virginia University.

Harden, Thomas Keith, Assistant Professor of Technology. B.S., Miami University; M.S. University of Dayton; Ed.D., University of Cincinnati.

Martin, G. Eugene, Professor of Technology and Chair of the Department of Technology. B.S., Southern Illinois University; M.Ed., Miami University; Ed.D., University of Maryland.

Walker, Joe Wayne, Associate Professor of Technology and Supervisor of Student Teaching. B.S., M.Ed., Ed.D., North Texas State University.
Windham, Billy Lee, Associate Professor of Technology. B.S. in Ed., M.A., Southwest Texas State University; Ed.D., Texas A&M University.

Winek, Gary Joseph, Assistant Professor of Technology. B.S., University of Wisconsin—Stout; M.Ed., Ball State University.

Degree Programs

The Department of Technology offers the degrees of Master of Arts and Master of Education, both with majors in Industrial Arts. The Master of Arts consists of at least 30 hours, with a major 18-24 hours including a thesis, and a minor of 6-12 hours. The Master of Education consists of at least 36 hours, with a major of 21 hours without a thesis, and a minor of 15 hours.

Courses Offered

5381 Industrial Methods and Production Techniques. (3-0) Industrial arts teachers select information regarding structure of modern manufacturing methods and techniques. Students gain insight into enlightened industrial practices. Examples of the technology of specific industries and analysis of methods so that basic principles of production and techniques may be brought to students in typical school situations.

*5384 Technical Problems in Industrial Arts. (3-0) For the industrial arts teacher who needs to become acquainted with new developments within the industrial arts curriculum and for the graduate student who desires to strengthen certain experiences initiated in undergraduate courses. Plans will be developed on an individual basis.

5385 Modern Industries. (3-0) To assist teachers of industrial arts with the problem of guiding high school students to sources of information on technical, social, and economic aspects of modern industries. Individual and group studies will be made. Results will be submitted in a form suitable for publication.

5387 Planning Advanced Industrial Arts Laboratories. (3-0) Studies in depth of architectural, engineering, and educational problems encountered in designing, equipping, arranging, and specifying facility requirements for advanced industrial arts courses at the senior high school level.

5388 New Developments in Industrial Arts. (3-0) New concepts appearing in industrial arts since 1950 as a result of the increasing importance of technology.

*5389 Curriculum Construction in Industrial Arts. (3-0) Techniques and procedures in selection, organization, and production of teaching materials for use in junior and senior high school courses.

5390 Research in Industrial Arts. (3-0) Identification, analysis, and evaluation of significant research in industrial arts education. Explanation of research techniques applicable to problems. Preparation of research reports with a view to publication.

5393 Measurement and Evaluation Methods for Industrial Arts. (3-0) The objectives of evaluation, teacher-made tests, interpretation of standardized test results, statistical methods, and reporting techniques as used in industrial arts.

5396 Technology for Teachers of Elementary Grades. (3-2) Experiences in the use of materials, tools, and projects adapted to the activity center of the elementary classroom.

5399 or 5699 Thesis.

5692 Administration and Supervision of Driver Education. (6-0) Review basic driver education; advanced techniques of teaching simulation; multi-car range; multi-media response systems; concepts of supervision and administration; practices of supervisory behavior; group interaction; interviewing; scheduling of teaching teams, instructors, pupils, and administrative behavior. A research problem will be done in this course.

*May be repeated for additional credit with permission of the Chair of the department.
School of Business

Graduate Division

Graduate Faculty

Abrahamson, Royce Lynnwood, Professor of Management and Marketing. B.S. in Ed., M.Ed., Ph.D., The University of Texas at Austin.

Bishop, Bill Joe, Professor of Accounting and Computer Information Systems. B.B.A., M.B.A., North Texas State University; Ph.D., The University of Texas at Austin. C.P.A.

Bryant, Milton Robert, Assistant Professor of General Business and Chair of the Department of General Business. B.S., Florida Southern College; M.Engr., Ph.D., Texas A&M University.

Carman, Douglas Gary, Associate Professor of Finance and Economics. B.B.A., M.A., Ph.D., Southern Methodist University.

Chiodo, Beverly Ann, Associate Professor of General Business and Supervisor of Student Teaching. B.B.A., Baylor University; M.B.A., Texas Tech University; Ph.D., Texas A&M University.


Eure, Jack Douglas, Jr., Professor of Management and Marketing. B.B.A., M.B.A., North Texas State University; Ph.D., Louisiana State University.

Gowens, Paul Ray, Professor of Economics and Chair of the Department of Finance and Economics. B.A., M.S., Baylor University; Ph.D., The University of Mississippi.

Halatin, Theodore Joseph, Professor of Management and Marketing. B.A., Montclair State College; M.S., The University of Colorado; D.B.A., Texas Tech University.


Hunnicutt, Garland Gail, Associate Professor of Management and Marketing. A.S., Odessa College; B.A., B.B.A., The University of Texas at Austin; M.B.A., Ph.D., University of Arkansas.


Johnston, Walter Edward, Professor of General Business. B.S., M.S., Ph.D., Texas A&M University.

Lee, Orland Sherer, Associate Professor of Accounting and Computer Information Systems. A.A., Northern Oklahoma College; B.S., M.S., Ph.D., Oklahoma State University. C.P.A.

Morgan, Celia Ann, Professor of Finance and Economics. A.A., Lamar State College of Technology; B.B.A., The University of Texas at Austin; M.A., Ph.D., University of Houston.

Oliver, Joseph Robert, Associate Professor of Accounting and Computer Information Systems. B.S., B.A., M.A., Ph.D., University of Missouri. C.P.A.

Piersol, Darrell Thomas, Professor of Management and Marketing and Associate Dean of the School of Business. Ph.B., Illinois Wesleyan University; M.S., Ph.D., Purdue University.

Roach, Ed Dupree, Professor of Management and Marketing and Dean of the School of Business. B.B.A., M.B.A., North Texas State University; Ph.D., The University of Texas at Austin.

Ross, John Kelzy, Assistant Professor of Management and Marketing. B.B.A., Texas Wesleyan College; M.B.A., University of Dallas; Ph.D., North Texas State University.

Savage, Vernon Howard, Associate Professor of Finance and Economics. B.A., M.A., North Texas State University; Ph.D., The University of Texas at Austin.

Stutts, Mary Ann, Associate Professor of Management and Marketing. B.B.A., The University of Texas at Austin; M.B.A., Ph.D., Texas A&M University.

Wilson, Wilton Leland, Professor of Management and Marketing. B.B.A., M.S., Texas A&I University; Ph.D., University of Arkansas.

Yeary, James Donald, Associate Professor of Accounting and Computer Information Systems. B.B.A., M.S.A., Texas Tech University; Ph.D., Oklahoma State University. C.P.A.

Degree Programs

The Master of Business Administration degree program focuses upon the problem-solving and decision-making responsibilities of modern management and is aimed at providing broad-based preparation for careers in either the private or public sector. The program offers a general degree in Business Administration; no specific areas of concentration are given.

The MBA degree may be earned under either a thesis or non-thesis plan. Under the thesis plan, you must satisfy the common body of knowledge plus 30 semester hours of graduate-level courses (which includes 6 hours of thesis). Under the non-thesis plan, you must satisfy the common body of knowledge plus 36 semester hours of graduate-level courses. A comprehensive examination cannot be taken until all common body of knowledge courses have been completed.

Admission Policy. Applicants to the MBA degree program must hold a baccalaureate degree and achieve a satisfactory admission index as determined by a combination of the applicant's Graduate Management Admission Test (GMAT) score (minimum score of 400 required) plus EITHER (1) the overall undergraduate grade-point-average (GPA), OR, (2) the GPA on the last 60 undergraduate semester hours before receipt of the baccalaureate.

1Up to 6 hours of graduate course work may be accepted as transfer from another university.
2For regular admission into the program, you must score at least 400 on the GMAT exam and have an admission index of (1) at least 950 points based on the formula: 200 times the overall undergraduate GPA plus the GMAT score; or (2) at least 1000 points based on the formula: 200 times the GPA for your last 60 undergraduate semester hours plus the GMAT score. Applicants not meeting the minimum admission index requirement may, under unusual circumstances, be admitted based on an assessment of their professional accomplishments. The GMAT is administered at various universities throughout the United States, usually during the months of October, January, March, and June. Prospective applicants should address all inquiries regarding registration for GMAT, most convenient location, specific GMAT dates, etc., to: Graduate Management Admission Test, Educational Testing Service, Box 966-R, Princeton, New Jersey 08541. GMAT information may also be obtained by contacting the Southwest Texas State University Counseling Center.
Applicants not submitting a GMAT score, but possessing either an overall 3.0 undergraduate GPA, or a GPA of 3.25 on the last 60 undergraduate semester hours, may be admitted provisionally for one semester only, during which time they must submit a GMAT score of such magnitude as to meet the minimum admission index requirement (minimum GMAT score of 400 required).

To succeed in the MBA program, you must be able to effectively communicate ideas both orally and in writing. In order to demonstrate your proficiency with the English language, all international students are required to complete an interview with the MBA Director. In some cases you may be required to take remedial courses to improve your speaking skills to an acceptable level before you are allowed to enroll in graduate business courses.

**Common Body of Knowledge (CBK).** All candidates for the MBA degree must satisfy the common body of knowledge requirements. The CBK is essential preparation for advanced study in business. All or part of the 27 semester hours comprising the CBK (or their equivalents) may be required based on an evaluation of your previous academic course work.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>2310, 2320</td>
<td>Principles of Economics</td>
</tr>
<tr>
<td>2361, 2362</td>
<td>Accounting I, II</td>
</tr>
<tr>
<td>3303</td>
<td>Principles of Management</td>
</tr>
<tr>
<td>3312</td>
<td>Corporation Finance</td>
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<tr>
<td>3333</td>
<td>Business Statistics</td>
</tr>
<tr>
<td>3343</td>
<td>Marketing</td>
</tr>
<tr>
<td>3361</td>
<td>Business Law I</td>
</tr>
</tbody>
</table>

**Graduate Courses.** The MBA degree program is designed to provide an integrated framework of course material logically sequenced through three distinct program phases: core, electives, and a capstone course. It is recommended that you first complete 21 of the 24 semester hours of core requirements, excluding BA 5313, prior to beginning elective courses. Also, it is recommended that BA 5390 be taken the first semester you are enrolled. It is intended that BA 5313 be taken in your last semester and serve as the capstone course for integrating the course material taken in the MBA program.

All candidates for the MBA degree program must complete the following core of 24 semester hours:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BA 5312</td>
<td>BA 5321</td>
</tr>
<tr>
<td>BA 5313</td>
<td>BA 5331</td>
</tr>
<tr>
<td>BA 5316 or BA 5378</td>
<td>BA 5361</td>
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</tbody>
</table>

In addition to the above core, if you choose the non-thesis plan you must complete 12 semester hours of graduate-level electives. The courses you select must be approved by the MBA Director. If you elect to write a thesis, you are required to take the thesis courses (see BA 5399, BA 5699) in place of electives.

You must satisfy all prerequisites of a course before enrolling in that course. Specific course prerequisites are included in the course descriptions listed below.

In summary, the requirements for the MBA degree program consist of satisfactory completion of the following:

1. The common body of knowledge (CBK) courses as previously specified (or their equivalents) in either the baccalaureate degree program or as part of the MBA degree program;
2. Eight MBA core courses as specified above;
3. Four MBA graduate-level elective courses, or a minimum of 6 hours of thesis (see BA 5399, BA 5699), depending upon whether non-thesis or thesis plan is selected;
4. Successful completion of the comprehensive examination.
5. Acceptance of the thesis, if the degree plan with thesis is selected.
Courses Offered

5311 Current Developments in Marketing. (3-0) Advanced study of marketing functions and institutions; marketing structures, strategies, policies, and problems. Students will be given an opportunity to examine developments of special interest to them. Prerequisite: Marketing 3343.

5312 Seminar in Management. (3-0) Study and analysis of management theory; managerial functions; management principles; philosophies of management; analysis of nature and problems and approaches to planning, organizing, decision making, and controlling through the study of recent relevant literature and selected cases. Prerequisite: Management 3303.

5313 Administrative Policy. (3-0) An integrative approach to policy formulation and administration (decision making) to achieve organization objectives. Should be taken the last semester of student's MBA program.

5314 Organization Behavior and Human Relations. (3-0) The analysis of interpersonal behavior in organizations through the study of the interrelationship and impact of human, technical, economic, and social factors in business administration. Prerequisite: Management 3303.

5316 Managerial Economics. (3-0) The application of economic theory and analysis to the formulation of business policy, including demand analysis, production theory, linear programming, and pricing policy. Student may take either BA 5316 or BA 5378. Prerequisites: Economics 2310, Economics 2320.

5321 Seminar in Marketing. (3-0) A study of the planning and coordination of marketing functions, marketing policies, and the analysis of marketing administration. Prerequisite: Marketing 3343.

5324 Government Regulation of Business. (3-0) Deals with the evolving structure of American industry and the government regulations and agencies which affect the competitive conditions under which all contemporary business must operate. Prerequisites: Economics 2310, Economics 2320.

5328 Seminar in Labor Relations. (3-0) The study and analysis of labor-management relations in both the private and public sectors. Includes an in-depth and practical coverage of labor and management strategies in the collective bargaining process, contract negotiations, labor disputes, and arbitration.

5330 Seminar in Personnel Administration. (3-0) A study of current developments and practices in industrial relations, including executive development programs; employee communications; wage administration; labor force and labor market; employee services; human relations and productivity; the labor agreement; settlement of labor disputes and current contributions to personnel theory. Prerequisite: Management 4373, or consent of Chair of Management and Marketing.

5331 Statistical Methods for Business Analysis. (3-0) A study of probability, sampling methods, statistical inference, analysis of variance, chi-square, multiple and partial regression, and the use of these tools for the purpose of decision making in business and economics. Prerequisite: Business Administration 3333.

5332 Quantitative Methods. (3-0) A study of management science/operations research emphasizing theory and applications of evaluative, predictive, and optimizing models. Prerequisite: Business Administration 3333.
*5333 Problems in Business Administration. The student is given the opportunity to work in the field of his/her special interest, particularly in the subject of accounting, business law, marketing, statistics, finance, and insurance. The course will be conducted by conferences between the student and instructor concerned. Problems will be assigned as nearly as possible for the needs of the individual student.

5340 Seminar for Computer Science in Business. (3-0) Introduction to the electronic computer as a business tool, fundamentals of data processing, introduction to a problem-oriented programming language with applications in business and economics.
Prerequisite: Consent of instructor.

5342 Basic Computer Systems. (3-0) Concepts of computer logic and computer systems. Applications of software systems to the development of models for organizational decision making. The student will program decision models and basic file-oriented information systems using FORTRAN and COBOL.
Prerequisite: Business Administration 5340, or Computer Information Systems 2321, or consent of instructor.

5343 Computer-Based Management Information Systems. (3-0) Principles of systems analysis and design of computer-based management information systems. Included is an introduction to the development of a computer-based management information system and a career-oriented application of system analysis and design.
Prerequisite: Business Administration 5340, or Computer Information Systems 3321, or consent of instructor.

5344 Introduction to Computer Simulation. (3-0) Use of discrete simulation languages in the modeling of complex business problems. Instruction involving the programming in a simulation language of a structured set of problems.
Prerequisite: Business Administration 5340, or Computer Information Systems 2321, or consent of instructor.

5361 Seminar in Managerial Accounting. (3-0) Managerial use of accounting data as an aid in decision making and control of business operations.
Prerequisites: Accounting 2361, Accounting 2362.

5362 Cost and Managerial Accounting Theory. (3-0) A study of recent developments and topics in the area of cost and managerial accounting. Includes a discussion of quantitative techniques and their applicability to accounting problems.
Prerequisite: Business Administration 5361, or consent of instructor.

5363 Contemporary Accounting Theory. (3-0) A study of the development of current accounting theory including pronouncements by the FASB. Emphasis is placed on current accounting issues.
Prerequisite: Business Administration 5361, or consent of graduate adviser.

5367 Seminar in Finance. (3-0) Examination of current theoretical and practical issues of finance. Topics include capital budgeting; capital structure and cost of capital; dividend policy and valuation; mergers and acquisitions; international financial management; and financial impact of accounting practices, principles, and disclosure.
Prerequisites: Accounting 2361, Accounting 2362, and Finance 3312.

5376 Economic Education I. (3-0) Designed to develop basic economic concepts secondary students can understand and use.

5377 Economic Education II. (3-0) Designed to help secondary students solve meaningful problems they face by applying basic economic analysis.
Prerequisite: Business Administration 5376, or consent of instructor.

5378 Macroeconomic Theory and Policy. (3-0) An analysis of theory and policy questions relating to the rate of economic growth. The theory of national income, employment and the price level from the point of view of dynamics.
Student may take either BA 5378 or BA 5316.
Prerequisites: Economics 2310, Economics 2320.

*May be repeated once with different emphasis for additional credit.
5387  **Managerial Finance.** (3-0) Course concentrates on the finance function, analysis and budgeting of funds, management of current assets, short and intermediate-term financing requirements, long-term debt policy and capital structure, capital budgeting, and the concept of cost of capital. Risk and return trade-offs are also studied.

5390  **Business Research Methods.** (3-0) Designed to aid graduate students in analyzing reports and evaluating research and in planning research reports. Selection of research problems, sources of data, analysis, presentation, report writing, directed reading, class reports, and a research problem.

It is recommended that the student take this course in the first semester in which enrolled.

5399 or 5699  **Thesis.**
School of Education

Department of Education

Graduate Faculty

Bechtol, William Milton, Professor of Education and Chair of the Department of Education. B.S., M.Ed., Ed.D., Miami University.

Beck, John James, Jr., Assistant Professor of Education. B.S., Southwest Texas State University; B.S., University of Washington; M.A.T., Ph.D., The University of Nebraska.

Blythe, Hal Tucker, Associate Professor of Education. B.S.E., M.S.E., State College of Arkansas; Ph.D., East Texas State University.

Brown, William Frank, Professor of Education. B.S., Trinity University; M.A., Ed.D., The University of Texas at Austin.

Bynum, James Lowell, Professor of Education. B.S., McMurry College; M.Ed., West Texas State University; Ed.D., Texas Tech University.

Conoley, Colleen Wyatt, Professor of Education and Director of Counseling and Guidance Program. B.A., University of Arkansas; M.A., Ph.D., The University of Texas at Austin.

Dorsey, Oscar Lee, Professor of Education. A.A., Angelo State University; B.S., Abilene Christian College; M.Ed., Ph.D., Texas A&M University.

Fite, Kathleen Elizabeth, Associate Professor of Education. B.S. in Ed., M.Ed., Southwest Texas State University; Ed.D., North Texas State University.

Gaddis, Marilyn Tyler, Assistant Professor of Education. B.A., Pomona College; M.A., Claremont Graduate School; Ph.D., University of Wisconsin.

Garland, James Jasper, Professor of Education and Dean of the School of Education. B.S., M.A., and Ed.D., Baylor University.

Gillis, Marguerite Kapualani, Assistant Professor of Education. B.S., State College at Bridgewater; M.Ed., University of Guam; Ed.D., West Virginia University.

Goldsmith, James Milton, Assistant Professor of Education. B.S., M.Ed., East Texas State University.

Griffin, Barbara Lee, Assistant Professor of Education. B.S., Florida University; M.Ed., Indiana University; Ph.D., Florida University.

Hammond, Dick Earl, Assistant Professor of Education. B.A., M.A.T., M.S., Indiana University; Ed.D., University of Arkansas.

Hardcastle, Beverly, Assistant Professor of Education. B.A., University of Iowa; Ph.D., Arizona State University.

Hatcher, Barbara Ann, Associate Professor of Education and Supervisor of Student Teaching. B.S., The University of Texas at Austin; M.Ed., Southwest Texas State University; Ed.D., North Texas State University.

Hefner, Robert Lee, Professor of Education. B.S., East Texas State University; M.Ed., North Texas State University; Ph.D., Texas A&M University.

Henry, William Gammon, Jr., Associate Professor of Education and Director of Audio-Visual Aids. B.M., North Texas State University; M.S. in Ed., Ph.D., Indiana University.
Hughes, Billie Edward, Associate Professor of Education and Director of Visiting Teacher Program. B.A., Howard Payne University; M.Ed., Ed.D., North Texas State University.

Jorgenson, Christabel Bertelsen, Associate Professor of Education. B.A., Texas Lutheran College; M.Ed., Texas Christian University; Ph.D., Texas Woman's University.

Kurtz, William Harry, Associate Professor of Education. B.S., Northwest Missouri State University; M.Ed., Ed.D., University of Missouri.

McDaniel, Elizabeth Logan, Professor of Education and Director of School Psychology Program. B.A., University of California at Los Angeles; M.S., University of Illinois; Ph.D., The University of Texas at Austin.

Miller, Damon J., Professor of Education. B.A., M.Ed., Howard Payne College; Ph.D., The University of Texas at Austin.

Miller, Richard Irvin, Professor of Education. B.S., University of Nebraska; M.Ed., Springfield College; Ed.D., Columbia University.

Moore, Betty Jean, Professor of Education. B.A., Pasadena College; M.A., University of Nevada; Ph.D., University of Illinois.

Moore, Joe Midge, Associate Professor of Education and Director of Secondary Education Program. B.S., M.Ed., Ed.D., North Texas State University.

Newberry, William Clarke, Associate Professor of Education. B.S., Southwest Texas State University; M.Ed., Stephen F. Austin University; Ed.D., The University of Texas at Austin.

Nicosia, Ralph Timothy, Associate Professor of Education and Director of Early Childhood Program. B.S., M.Ed., Ed.D., North Texas State University.

O'Bryan, Sharon, Assistant Professor of Education. B.S., M.A.T., Ed.D., Indiana University.

Olson, Mary Webb, Assistant Professor of Education. B.A., Trinity University; M.Ed., Southwest Texas State University.

Parkay, Forrest Winston, Assistant Professor of Education. B.A., M.A., University of Illinois; Ph.D., The University of Chicago.

Rivas, Maria Salas, Assistant Professor of Education. B.S., Texas Tech University; M.S., Antioch College; Ph.D., University of Kansas.

Rodriguez, Carlos Gonzalez, Assistant Professor of Education and Director of Bilingual Program. B.S.Ed., M.Ed., Southwest Texas State University; Ph.D., The University of Texas at Austin.

Seifert, Edward Herman, III, Associate Professor of Education. B.S.Ed., Ed.S., Central Missouri State University; M.S.Ed., Northwest Missouri State University; Ed.D., Oklahoma State University.

Smith, Milton Lloyd, Professor of Education and Director of Junior College Education. B.S., University of Corpus Christi; M.S., Texas A&I University; Ph.D., The University of Texas at Austin.

Sparks, Rebecca Lewis, Professor of Education and Director of Elementary Education Program. B.A., Baylor University; B.S., Texas Woman's University; M.Ed., Ed.D., North Texas State University.

Stevens, Paul Lester, Professor of Education and Director of Educational Administration and Supervision Program. B.S., Texas A&M University; M.Ed., University of Houston; Ph.D., Texas A&M University.
Thomas, Jerry Leon, Associate Professor of Education and Director of Field Services. B.S., M.S., New Mexico Western College; Ph.D., The University of Texas at Austin.

Williamson, Bobby Lee, Professor of Education. B.S., Texas A&M University; M.Ed., Southwest Texas State University; Ed.D., Colorado State College.

Willoughby, Jack Michael, Associate Professor of Education, Dean of Graduate Studies and Research, and Director of the Office of Sponsored Projects. B.S., Texas A&M University; M.Ed., Southwest Texas State University; Ed.D., University of Southern Mississippi.

Worley, Stinson Ezell, Professor of Education and Director of Reading Program. B.A., Baylor University, M.Ed., Ed.D., North Texas State University.

Zunker, Vernon George, Professor of Education and Director of the Counseling Center. B.S., Texas Lutheran College; M.Ed., Trinity University; Ed.D., University of Houston.

Degree Programs

The Department of Education offers a variety of degrees and programs. Before proceeding into any field of education at SWT, the degree applicant should inquire as to certification requirements associated with or prerequisite to the degree. You must keep in mind that certification requirements and graduate degree requirements may not be related in any way and that the satisfactory completion of degree requirements may not always lead directly to certification.

In general, majors in any field of education who have not completed student teaching must complete this course as a background requirement or obtain a waiver from the Department of Education on the basis of teaching experience.

It is possible to earn the degree of Master of Arts in most areas of education with a minimum of 30 semester hours including the thesis. The Master of Education degree is usually the appropriate course of study if you desire to complete certification of some type.

The Master of Education degree consists of a minimum of 36 hours without the thesis. Semester hour requirements vary within the major and minor areas. Some courses are scheduled at night to enable working students to complete a degree and/or certification.

Education majors, other than those in Educational Administration, who apply for the Master of Education degree must include a research course: Education 5390 or Education 5391. As a part of the requirements of each course, you will write a formal report prepared in conformity with instructions given in the manual for writing the thesis.

Major programs are available in the following areas:

Counseling and Guidance. This major usually consists of a minimum of 24 hours of Education and a minor or split minor of 12 hours.

Educational Administration. A structured program for preparation of those interested in managing the educational enterprise. The 36 hour M.Ed. degree is predicated upon development of skills in behavioral science, administrative procedures, and curriculum improvement. Specific objectives address leadership managerial principles, legal and financial procedures, sociological and psychological aspects of administration, and curriculum implementation. The first three courses in the program are Ed 6340, Psy 5370, and Ed 5349. You must attain a 3.25 GPA to be eligible for the comprehensive examination.

Elementary Education. This major usually consists of 24-27 hours in Elementary Education and an academic minor of 9-12 hours or a composite minor grouped under the title of Methods and Materials. Emphasis on Bilingual Education, Early Childhood, or Gifted/Talented is offered within this major.

Management of Vocational/Technical Education. This major is a highly specialized composite degree program. It has flexibility of coursework which can be tailored to complement and strengthen your individual interests and background. An administrative core is common to all degree outlines. Supporting work may lead to certification as a vocational teacher, coordinator, administrator, or supervisor. Vocational counselor orientation is also possible. This program is particularly adaptable to prior military service personnel who desire to teach in community colleges.
Reading Education. This major consists of a minimum of 39 hours in a composite program consisting of 24 hours in Reading Education and a composite minor of 15 hours from Linguistics, Sociology, Psychology, Special Education, and Supervision. Completion of the program and three years' teaching experience qualify the graduate for certification as a Texas Professional Reading Specialist.

The program also permits students to minor in Reading Education and major in one of the following: Counseling and Guidance, Educational Administration, Elementary Education, or Secondary Education.

In addition to meeting Graduate School admission requirements as identified in the forward section of this Bulletin, to be considered for admission to the Reading Education Program you must submit the following data for review by the Graduate Reading Education Admission Committee:
1. Application form supplied by Reading Education program;
2. Three letters of reference from professional sources;
3. Copy of Graduate Record Examination score; and
4. Statement concerning your experience and purpose for entering the Reading Education program.

Also, after you have completed 12 semester hours in prescribed courses, you must complete a program examination.

School Psychology. This interdepartmental (Education, Psychology, and Special Education) certification sequence leads to state certification as both a Psychological Associate and as an Associate School Psychologist. It fulfills the requirements of the Texas State Board of Examination of Psychologists and is approved by the Texas Education Agency at the state level and also accredited by both the National Association of School Psychologists and the National Council for the Accreditation of Teacher Education (NASP/NCATE) at the national level. The Master of Education with a major in Counseling and Guidance-School Psychology is a 48-hour program.

For admission to the School Psychology program you must apply through the Department of Education, Attn: School Psychology Program, in addition to meeting the regular Graduate School admission requirements.

Secondary Education. This major usually consists of 18-24 hours in Secondary Education and a 12-18 hour academic minor. Degree outlines in Secondary Education focus on one of three areas: General Secondary Education, Gifted and Talented, or the Coaching of Competitive Sports.

Endorsements and certifications are available in addition to majors and concentrations associated with degree programs. These include Bilingual/Bicultural, Associate School Psychologist, Counseling, Early Childhood, Gifted/Talented, Guidance Associates, Mid-Management, Superintendent, Supervisor, Visiting Teacher, and Psychological Associate. Inquiries regarding any of these endorsement or certification programs should be directed to the Chair, Department of Education.

Effective May 1, 1986, satisfactory performance on a State Board of Education test is required for provisional or professional certificates in Education. State law also requires that no one convicted of a felony may be certified to teach in Texas.

Certification in Educational Administration. The program in Administration offers two distinct areas for certification as Texas public school administrators: Mid-Management, a 45-hour program, and the Superintendent, requiring 15 hours in addition to the 45 hours of the Mid-Management level. These certificates fulfill requirements for administrative positions such as elementary, middle, or secondary principal, and central office positions. Post-graduates seeking administrative certification must meet entrance and exit requirements expected of degree-seeking applicants.

Certification in Supervision. The program in Supervision offers Texas certification with a 45-hour program. If you follow the degree option, a Master of Education is awarded after you complete 36 hours of prescribed courses. This plan consists of courses in curriculum, educational leadership, and community liaison skills. You may choose to specialize in Elementary, Vocational, Early Childhood, Bilingual, Reading, Gifted/Talented, Special Education, or have a composite area.
Kindergarten Endorsement. The following four courses, 12 semester hours, will constitute endorsement in Kindergarten Education on the elementary level: Education 5318, Education 5319, Education 5330, and Education 5378K. Six semester hours of Early Childhood may be counted as electives toward the elementary degree.

Courses Offered

*5101 Research. (1-0) Individual research in various problems related to education. Data, analysis, and conclusions will be reported.

*5178 Workshop in Education. (1-0) A workshop in innovative techniques or materials offered either on campus or off-campus in approved sites. Designed to give classroom teachers college credit for in-service-type training; course gives an opportunity for teachers to up-grade their skills and knowledge. A letter following the course number will indicate the areas of emphasis according to this code: (b) Administration, (c) Counseling, (h) Supervision, (i) Elementary, (j) Secondary, (k) Early Childhood, (l) Bilingual, (r) Reading.

5201 Methods in Secondary Aviation/Aerospace. (2-0) One of the two courses for qualifying as teacher of Aviation/Aerospace Education in the secondary school. Deals with means of implementing the secondary program, and with techniques, methods, and resources for the secondary course.

5202 Development, Organization, and Use of Instructional Material. (2-0) Designed to assist the vocational education teachers in conducting instruction. It includes the selection of lesson content, planning the lesson, and the use of various instructional sheets that will assist the teacher. Emphasis will be placed on the correct development of instructional sheets. Also, a study will be made of the different methods that may be used to secure, evaluate, and incorporate this material into the instructional program. A study will also be made of the various methods of testing the effectiveness of the instruction and how the progress of the student may be recorded for future references and class planning.

5204 Human Relations for Vocational Education Teachers. (2-0) Designed to aid vocational teachers in establishing and maintaining effective relationships with students, co-workers, other school personnel, industry, and persons in the community. Includes a review of the principles of learning. Principles and skills in working with people will be developed through a study of: influences of heredity and environment, basic wants and needs, motivational factors, development of positive attitudes, teacher-student relationships, leadership development, and elements of effective communication. A study of techniques of identifying and arriving at probable solutions to problems in human relations will be included.

5205 Shop and Classroom Organization and Management. (2-0) Designed to assist vocational education shop or laboratory instructors in the organization and management procedures used in vocational shop programs. Includes establishing record keeping systems; systems of controlling tools, equipment and supplies; using organization, rotation and progress charts; using student leadership in routine non-teaching class and laboratory tasks; establishing a safety program; and developing proper attitudes with the program.

5206 Analysis and Course Making. (2-0) Designed to assist vocational industrial teachers in the gathering, organizing and preparing of teachable material based upon sound occupational practices. Includes a study of factors involved in development of vocational instruction, the parts of a course of study and procedures for trade or occupational analysis. Trade or occupational analysis, course outlines, and progress charts will be prepared. Courses of study will be revised or prepared as completely as time will permit.

5207 Selection, Placement, and Follow-up in Vocational Education. (2-0) Designed to assist the beginning teacher-coordinator in organizing and operating cooperative training programs in the community. Includes procedures for selecting vocational occupations and training stations suitable for providing training to high school youth, placement of students in suitable employment for part-time training, coordinating students’ school and on-the-job training activities, organizing the classroom facilities, preparation of necessary reports, and preparation and maintenance of an effective record system.

*May be repeated once for additional credit at discretion of the Chair of the department.
5208 Problems in Cooperative Training. (2-0) Consists of a review of basic standards for Cooperative Education Training Programs and the underlying reasons for such standards with emphasis on the solution of actual problems in program operation. Includes study of the procedures and techniques involved in community surveys, interpretation of survey data, program promotion, and organization and coordination of all types of part-time and evening classes.

*5278 Workshop in Education. (2-0) This workshop in innovative educational techniques or materials is offered either on campus or off-campus in approved sites. Designed to give classroom teachers college credit for in-service-type training, skills, and knowledge. A letter following the course number will indicate the area of emphasis according to this code: (b) Administration, (c) Counseling, (h) Supervision, (i) Elementary, (j) Secondary, (k) Early Childhood, (l) Bilingual, (r) Reading.

5300 Vocational Student Identification, Placement, and Follow-up. (3-0) A study of the theory, methods, and instruments used in determining occupational aptitude, attitude, and interest of students (identification); the study of planning, organizing, and coordinating programs of job placement; and the study of the development and coordination of student follow-up.

5301 Methods of Teaching Vocational Subjects. (3-0) Designed to assist the vocational education teacher in understanding the nature of teaching, the various learning situations that must be met, the need for certain teaching methods and techniques, and the correct application of these to properly prepare students for entrance into, or advancement in, their chosen occupational field.

5302 Methods and Materials for Teaching the Bilingual Pupil. (3-0) Designed to assist the elementary teacher in selecting appropriate teaching strategies and materials for meeting the learning needs of the limited English proficient student. Program organization, materials, and resources will be emphasized.

5303 Aims and Objectives of Vocational Education. (3-0) Designed to assist the vocational teacher to recognize his/her relationship to the operation of the public education system at the local, state, and national levels. Major emphasis is placed upon vocational education programs and legislation. Includes a study of the purposes and structure of general education and vocational education, the development of vocational education in the United States, the need for vocational education, the organizational structure of vocational education, financial support and control of vocational education, and professional qualification of teachers of vocational education classes. Current trends in vocational education and their effects on present and future vocational programs will be discussed.

5304 Organization and Management of Marketing and Distributive Education Programs. (3-0) Planning and organizing local marketing and distributive education programs; techniques in coordinating cooperative and preparatory laboratories.

5305 Standardized Testing. (3-2) Problems and principles of administration, scoring and interpreting group and individually administered tests; utilization of test data for diagnostic, placement, predictive, and evaluative purposes; elementary statistical procedures; laboratory activities in test administration, scoring, and interpretation.

5306 Evaluative Techniques for the Classroom Teacher. (3-0) An in-depth study of the objectives of evaluation, teacher-made tests, interpretation of standardized test results, self-evaluation, school evaluation, sociometric techniques and their use, and reporting to parents.

5307 Counseling and Personality: Current Theories. (3-0) Theories of counseling and personality will be studied and discussed in the classroom. Students will observe counseling procedures recommended by each theorist and will be given supervised practice in the application and evaluation of these procedures.

*May be repeated once for additional credit at discretion of the Chair of the department.
5308 History and Philosophy of Teaching the Gifted/Talented. (3-0) Examination of the history and philosophy for teaching gifted/talented students. Focus will be upon characteristics, identification, and special needs. Theoretical models will be studied.

5309 Methods and Materials for Teaching the Gifted/Talented. (3-0) Organization of activities for the gifted/talented with emphasis upon program content, materials, resources, guidance, and development of related curriculum materials.

5310 The Middle School. (3-0) An overview of the middle school. Focus will be on the philosophy of the middle school, the middle school student, teacher, administrator, and the characteristics of the middle school program.

5311 Middle School Curriculum and Instruction. (3-0) Emphasis will be placed on the details of curriculum construction and teaching strategies to meet the unique characteristics of the middle school student.

5312 Elementary Language Arts: Current Trends. (3-0) A study of current trends in methods of instruction in the language arts, a study of research findings, and an examination of selected media and materials. Also identifies the relation of language arts to other aspects of the elementary school curriculum and the most effective diagnostic techniques for the language arts.

5313 Human Growth and Development I. (3-0) Training for teachers (elementary or secondary), counselors, supervisors, and administrators to improve their professional effectiveness through the direct study of individual pupils according to an organizing framework of scientific knowledge of human growth and development; emphasis on the physical processes, the affective processes, and peer relationship.

5314 Human Growth and Development II. (3-0) For teachers (elementary or secondary), counselors, supervisors, and administrators to increase their understanding of the motivation, the developmental level, and the abilities of individual pupils by a direct study of individuals in the classroom; emphasis upon increasing scientific knowledge of culture, self-development, and self-adjustive areas of development.

5317 Teaching Strategies for Elementary Teachers: Alternative Models. (3-0) Alternative teaching models based upon learning theory. Course designed to assist the elementary teacher in selecting appropriate strategies for meeting student learning styles and to broaden the scope of elementary school methodology.

5318 Advanced Early Child Development: Readiness for Learning and Language Abilities. (3-0) A study of the cognitive, affective, and psychomotor factors bearing on the young child's readiness for learning and acquisition of language. The course includes methods of child study, such as instruction, and practice in using observational techniques and anecdotal records. It includes the design and evaluation of specific readiness activities and guided field experience.

5319 Curriculum and the Young Child, I (Kindergarten). (3-0) Organization and evaluation of programs for young children. Translating developmental knowledge into effective practices which may be employed in the total education of young children.

5320 Psychology in Teaching Reading. (3-0) A detailed study of the psychological bases of the reading process: the perceptual nature of reading, learning principles, sensory aspects, physiological correlates, phonemegrapheme correspondence, personality factors, concept formation.

5322 Methods and Materials for Teaching Reading in the Elementary Grades. (3-0) This course is concerned with children four to twelve years old and concentrates on preventing reading failure by dealing with readiness; assessment of linguistic, psycho-social, and physiological development; diagnostic reading; scope and sequence of beginning reading skills; and use of traditional and innovative methods and materials adapted to individual differences.
5323 Diagnosis of Reading Problems. (3-0) A study of the nature and causes of reading problems including observations, demonstrations, and supervised practice in the techniques of diagnosis. Attention is given to interview procedures, diagnostic instruments, standard and informal tests, and report writing.
Prerequisites: Reading major: Education 5320, Education 5322, and Education 5324; Reading minor: Education 5322 or Education 5324.

5324 Teaching Reading in the Secondary School. (3-0) Deals with teaching developmental reading in the secondary school. Topics to be included are extension of fundamental reading skills, classroom diagnosis and correction of reading problems, study skills, developing flexibility and critical thinking, reading in the content areas, adolescent reading tastes, and supervision of secondary school reading programs.

5326 The Elementary School Curriculum. (3-0) Principles of curriculum development and organization, selection of curriculum experiences, planning of various types of units, and overview of curriculum outcomes in various areas, guiding school experiences and unit activities, and actual practice in preparing curriculum materials.

5327 Principles and Practices in the Elementary School. (3-0) Course defines and interprets the newer trends in elementary school practices; the philosophy and objectives of the elementary school, and procedures for implementing these objectives; classroom organization and management; the principles of unified learning as applied to school experiences, procedures for planning and developing experiences, meeting individual needs, and evaluation.

5328 Elementary Social Studies: Curriculum Problems. (3-0) Development and purposes of the social studies curriculum; contributions of the social sciences to the social studies curriculum; relation of the social studies to the total elementary program; curriculum construction, supervision, and evaluation; current issues and trends.


5330 Curriculum and the Young Child, II (Kindergarten). (3-0) Advanced study of curriculum and materials used in educational programs for young children.

5331 Procedures and Practices for Teaching Reading to Black, Spanish, and other Multi-Ethnic Pupils. (3-0) Deals with the linguistic and reading problems unique to pupils whose native language or dialect is other than standard Middle-American English, with particular emphasis on pupils of Afro-American or Mexican-American heritage. Other topics include: teaching English as a second language, teaching reading in a bilingual school setting, creating innovative methods, and materials for bilingual pupils.

5332 Remediation of Reading Disabilities. (3-0) Methods and materials for teaching pupils with specific reading disabilities. Course includes interpreting diagnostic data, planning and organizing a remedial program, the study of remedial techniques, evaluation of remedial approaches, and required hours of clinical practice.
Prerequisite: For Reading Education majors or minors: Education 5322, Education 5323, or Education 5324.

5333 The Secondary Curriculum. (3-0) A brief history of curriculum development with special emphasis upon the Texas curriculum program; basic principles of curriculum making, and techniques of curriculum construction and installation; aims and purposes of the curriculum as a function in perpetuating and improving democratic ideals; attention to significant researches in curriculum development.

5334 Public School Curriculum Leadership. (3-0) An examination of educational leadership as it relates to curriculum development and improvement. Consideration is given to the administrator's role in identifying and implementing innovations in curriculum construction at all levels; furnishing leadership in coordinating educational offerings.
in elementary and secondary schools; diagnosing and prescribing learning activities for all students' needs; planning and evaluating curriculum content and changes; and designating personalized programs in specific skill areas such as reading.

5335 **Clinical Practicum and Internship in Reading Disabilities.** (3-4) This is an advanced course on the clinical application of the nature, causes, and remediation of reading disabilities; it is conducted on campus or in an approved school setting. The course is designed to help reading teachers develop skills in testing, interviewing, analyzing case history findings, writing remedial prescriptions, teaching reading by using corrective or remedial procedures, and reporting to parents and schools. (In addition to lectures and seminars, students are required to have a minimum of 50 clock hours of supervised clinical practice.)

Prerequisites: One year or more of full-time teaching, Education 5323, Education 5332, and consent of instructor.

5336 **Methods and Materials for Teaching English as a Second Language.** (3-0) The identification and use of English as a Second Language (ESL) materials and teaching strategies for teaching ESL as an integrated process including first and second language acquisition.

5341 **Supervision of Instruction.** (3-0) Fundamental problems of supervision; the nature and organization of supervision, supervisory plans and principles; training of supervisory officials; standards for performance and appraisal; methods of improving instruction; case studies in supervision.

5342 **Supervision of the Elementary School.** (3-0) General organization for supervision; problems of classification, grouping; the principal's routines; in-service training; improvement of other teacher-learner situations.

5343 **Supervision of the Secondary School.** (3-0) Organization of the secondary school; classification, progress, and promotion; duties of the principal, in-service training; standards for performance appraisal; methods of improving instruction.

5344 **School-Community Relations.** (3-0) Development of concepts and methods in bringing closer integration of school and community, importance of community life in the educative process, and the community school concept.

5346 **The Principalship.** (3-0) Duties at both elementary and secondary levels; elements common to all; work in areas where functions are sharply differentiated at various levels. Consideration of such topics as these: the place of the principal in the administrative organization, community relationships, his/her business and personnel functions, office management, scheduling, administration of the curriculum, the library and other auxiliary services, the extra-curricular program, the guidance program, the school plant.

5349 **Interpersonal Behavior.** (3-0) Processes in interpersonal behavior through formal and informal groups. Role performance in interpersonal transactions. Status in group structure. Parameters on behavior created by personality, organizational structure, and leadership considerations. Organizational change and group behavior.

5350 **Organization and Administration of Guidance Services.** (3-0) In-depth study of principles and practices in the organization and administration of guidance services from K-12. Topics include (1) the structure, purposes and goals of guidance services, (2) the roles and functions of administrators, guidance personnel, and teachers in the guidance service, (3) legal and ethical considerations of guidance personnel, (4) analysis of current counseling theories, and (5) program development and evaluation.

5352 **Paraprofessional in Counseling and Guidance.** (3-0) Practical problems in organizing, administering, and evaluating a counseling program utilizing paraprofessionals to provide a variety of guidance services. These problem areas will receive in-depth examination: (1) delineation of job duties, (2) identification of requisite competencies, (3) adaptation of methods and materials, (4) provision of necessary training, (5) coordination of staff activities, and (6) evaluation of program effectiveness.
5353 Counseling and Guidance Applications of Computer Technology. (3-0) Practical problems in selecting, implementing, and evaluating computer programs for standardized testing, career counseling, educational advising, learning skills improvement, and job placement will receive in-depth examination. Hands-on operation of microcomputer hardware, evaluation and utilization of available software, and preparation of guidance materials for computer programming will be stressed.

5354 Counseling Techniques. (3-0) Techniques for individual counseling: Models and intensive practice in systematic approaches to helping skills and interpersonal relationships. Affective and cognitive processes of understanding, acceptance, and sincerity, as components of effective communication, will be major foci of the course.

5355 Vocational Guidance and Occupational Information. (3-0) Introduction to the nature and use of occupational information in counseling and special group guidance classes; sources of information; methods of developing information through job analysis and community surveys.

5357 Individual Testing. (3-2) Problems of administering and interpreting psychological tests designed for individual administration. Study of the utilization of intelligence, proficiency and projective tests in evaluation, classification, and prediction. Laboratory activities in test administration, scoring, and interpretation. Prerequisite: Education 5305, or approval of the instructor.

5358 Group Procedures in Guidance and Counseling. (3-0) A laboratory experience designed to provide theoretical background and practical application for techniques in group guidance and counseling. Reading in the field of group dynamics will be required. Techniques for the utilization of group guidance in the curriculum will be explored. Techniques of group therapy in the treatment of emotional and educational maladjustment will also be practiced.

5363 Strategies for Improving Secondary Teaching. (3-0) Analysis of teaching concepts as they apply to the development and improvement of teaching strategies appropriate for implementing selected objectives and content by the secondary teacher. Micro teaching sessions, including video tape recording, will be required.

5366 Seminar in Individual and Group Counseling (Advanced). (3-0) The study of theoretical positions and techniques used by outstanding counseling psychologists in individual and group practice. Supervised practice in both classical and contemporary approaches will be required. Students will identify counseling goals and evaluate the counseling sessions, using criteria appropriate to the specific theoretical position which is being practiced. Prerequisite: Education 5354.

5367 Marriage and Family Counseling. (3-0) Introductory course involving the study of reasons for client need for marriage and family counseling; understandings of the principles of communication and goals of marriage and family counseling; and practice of techniques used in selected approaches to marriage and family counseling.

5368 Elementary School Counseling. (3-0) Orientation to elementary school guidance and counseling. Developmental and special needs of elementary school-aged children are analyzed. Tests and other assessment techniques are examined. Skills are developed in the three major functions of the elementary guidance worker: counseling, coordination, and consultation.

5370 Psychology of Learning. (3-0) Basic problems in the acquisition of responses are studied, treating such constructs as reinforcement, extinction, retention, forgetting, problem solving, motivation, and punishment. Major theories are treated through attention to classical experiments, but greatest emphasis is given contemporary research. See Psychology 5370.

5372 Philosophical Foundations of Education. (3-0) An overview of the field of educational philosophy as related to the spectrum of human events and the educative process in particular. Designed for master's degree students without previous graduate work in philosophy or philosophy of education.
5374 Administration of Special Program. (3-0) Analysis of legal, academic, and administrative requirements for special programs in the public schools. Emphasis is on special, vocational-technical and career education. Attention will be given to current state and federally funded programs requiring special administrative skills.

5375 The School Plant. (3-0) A study of plans for determining the extent and character of present and future building and equipment needs of a school unit, efficiency of present plant, operation and maintenance, planning the building program.

5376 Psychological Assessment I. (3-0) Standard individual tests (i.e. WISC, WAIS, BINET) of general intelligence and special abilities and achievement; their theoretical and statistical bases; construction, administration, scoring, and interpretation of these instruments. See Psychology 5376.

Prerequisite: Advanced education, psychology, anthropology, or sociology, including child development or child psychology, and consent of the instructor.

5377 Psychological Assessment II. (3-0) Advanced investigations in personality dynamics, role expectations, and projective instruments (i.e. Rorschach, Thematic Apperception Test, etc.) and their theoretical bases, construction, administration, scoring and analysis, synthesis with interview, self report, psychometric and sociometric data. See Psychology 5377.

Prerequisite: Education/Psychology 5376 or its equivalent, graduate standing, and consent of the instructor.

5378 Problems in Education. (3-0) Individual problems not related to thesis or research problems. Designed to place emphasis on selected areas of study. A letter following the course number will indicate the area of emphasis according to this code: (a) School Psychology, (b) Administration, (c) Counseling, (d) Junior College, (h) Supervision, (i) Elementary, (j) Secondary, (k) Early Childhood, (l) Bilingual.

5380 Occupational Analysis. (6-0) Analysis of office occupations to determine the skills and related information needed for the purpose of determining the contents of a course of study needed by students for job entry level skills in an approved office occupation.

5381 Instructional Strategies in Vocational Office Education Programs. (3-0) For laboratory and teacher-coordinators of VOE programs. Development of strategies based on an assessment of individual students' needs and office career objectives.

5382 Organizing and Implementing Cooperative Vocational Office Education Programs. (6-0) Identification of the Vocational Office Education student, placement of student in office occupations, evaluating prospective business offices to determine the effectiveness of office machines and office procedures in training VOE students, and analyzing supply and demand data for office occupations which insure job entry employment.

5385 Psychological Services in the School. (3-0) Concepts and procedures utilized in the prevention, diagnosis, referral, treatment, and rehabilitation of academic and behavioral problems among some children and adolescents; consultation with school personnel regarding pupil placement, curriculum design, and the mental health of students and educational experiments.

Prerequisite: Twelve hours of advanced education or psychology, including courses in human development, and/or consent of the instructor.

5386 Professional Problems in School Psychology. (3-0) Professional development and ethical position of the school psychologist. The role of the school psychologist in relation to school administrators, guidance and counseling personnel, teachers, parents, and others.

5387 Bilingual Education: Principles and Practices. (3-0) A study of the current trends in bilingual education and the elementary school practices, the philosophy and objectives of the bilingual elementary school program, classroom organization and management, and procedures for meeting individual needs.

*May be repeated once for additional credit at discretion of the Chair of the department.
**5389 Internship Practicum.** Offered separately for administrators, counselors, school psychologists, supervisors, and those who are candidates for positions in various areas of special education; will vary with the field chosen. A practicum is included for all like candidates for planning purposes, for discussion, and for evaluation. A special fee is usually charged; see the fee section of this catalog. A letter following the course number will indicate the areas according to this code: (a) School Psychology, (b) Administration, (c) Counseling, (h) Supervision, (i) Elementary, (j) Secondary.

5390 Research Seminar in Elementary Education. (3-0) A course in which each student will be given an opportunity to choose for study special problems to fit his/her particular needs and interests; research procedures needed in the preparation of thesis or other research reports. To demonstrate his/her mastery of these procedures, the student will present a research paper on a selected problem.

5391 Research Seminar in Secondary Education. (3-0) Problems in secondary education; emphasis on research procedure; a research paper is required of each student. A letter following the course number will indicate the area according to this code: (b) Administration.

5392 The Community Junior College. (3-0) An introduction to the community junior college and to its roles and functions in American education. Special attention will be directed to the evolution, development, patterns of organization, purposes, programs, personnel, and current issues of the community junior college.

5393 Community Junior College Curriculum. (3-0) A study of curriculum development in the community junior college with special emphasis upon current trends and issues relating to technical-vocational, adult and continuing education, community services, college transfer, and remedial functions of the curriculum.

5394 Teaching in the Community Junior College. (3-0) A study of the junior college instructional program with emphasis upon the instructor, his/her preparation, qualifications, and performance. Instructional strategies appropriate to the needs of junior college students, including adults, will be studied.

5395 Teaching Reading to Older Students and Adults. (3-0) Deals with teaching reading to older students. Topics to be included cover the special reading needs of older high risk students, competent and gifted students, and adult basic education students. Topics include: the nature of the learners; appropriate assessment strategies; methodologies; instructional materials and resources; and the groups, schools, and agencies which service these students.

5399 or 5699 Thesis.

6340 Public School Administration. (3-0) The overall principles of administration of public schools. Consideration of such topics as these: the processes of administration, organization—federal, state, local districts; instructional personnel and staff; relations with staff and school board.

6341 Pupil Personnel Services. (3-0) Designed to help administrators, counselors, supervisors, and teachers develop an understanding of role of pupil personnel services; responsibility for techniques of evaluating programs of pupil personnel services.

6344 Educational Leadership through Human Relations. (3-0) An examination of human relations concepts involved in educational administration. Consideration of such topics as the relationships involved in the social setting and educational environment; personal qualities of leadership conducive to good human relations; decision making; techniques of effective communications, group dynamics.

6345 Administration and Staff Personnel. (3-0) Organization and administration of professional staffs, positions, and relationships; professional ethics, welfare; professional involvement in policy and curriculum; faculty development.

**May be taken up to three times, for a total of 9 hours credit, at the discretion of the Chair of the department.**
6346 Administrative Theory. (3-0) Major emphasis of administrative theory as related to decision making. The first half of the course devoted to the consideration of administrative theories and principles; the second half to the practical application of theory and principle to recent and/or continuing problems of school administration. Decision making is emphasized as being the nature and substance of administration.

6347 The Superintendency. (3-0) The basic issues of problems confronting the superintendent, such as school buildings: planning, contracting, financing, equipping; fiscal and business management; taxation; budgeting, accounting; administering special services; transportation, food services, custodial services; management of personnel.

6348 Public School Laws. (3-0) Constitutional provisions, statutory laws, court decisions, and regulations governing public schools, with special reference to state and federal relationships.

6349 School Finance and Business Management. (3-0) Study of school funds on local, state, and federal level; budgeting, data processing; other systems of accounting; and reporting. Supply management as related to school efficiency. Maintenance of buildings, grounds, and equipment.

6350 Administrative Educational Design—A Systems Approach. (3-0) An advanced course to assist the educator in assembling school components into logical order. Emphasis will be on total system improvement, based upon continuing assessment and analysis. Balance and inter-relationship of all school district components will be structured into functional systems by each student.

6378 Problems in Education. (3-0) Individual problems not related to thesis or research problems. Designed to place emphasis on selected areas of study. A letter following the course number will indicate the area of emphasis according to this code: (b) Administration, (h) Supervision.

6389 Internship Practicum. Designed to give prospective school superintendents on-the-job training under the guidance of successful, experienced, practicing school administrators.

6647 Studies in the Humanities and Sciences. (6-0) An interdisciplinary approach to furnish administrative candidates with greater depth in the social sciences, humanities, and science. Although offered under the auspices of the Department of Education, the course is taught by a team of two or more members from the arts and sciences, supplemented by visiting lecturers. The aim is to give insight on man and his world, dealing with such sub-topics as Man in a Scientific Age, Man and Society, Man and Communication Media.

Department of Health and Physical Education

Graduate Faculty

Avent, Henrietta Hempstead, Professor of Health and Physical Education and Supervisor of Student Teaching. B.A., University of Kentucky; M.A. New York University; D.P.E., Indiana University.

Calsbeek, Franklin, Professor of Health and Physical Education, Assistant Dean of the School of Education, and Supervisor of Student Teaching. B.S., Augustana College; M.S., University of Illinois; Ed.D., University of Oregon.

Furney, Steven Reed, Assistant Professor of Health and Physical Education. B.S., Texas A&M University; M.Ed., University of Houston; Ed.D., University of Tennessee.

Guthrie, Roger Hugh, Assistant Professor of Health and Physical Education. B.B.A., University of Portland; B.S., University of Oregon; M.A., California State University, Chico; Ph.D., University of Illinois.
Hays, Joan Camille, Professor of Health and Physical Education. B.S., University of Utah; M.S., University of Wisconsin; Ph.D., The University of Texas at Austin.

Hoffman, Keith Farrell, Associate Professor of Health and Physical Education. B.S. in Ed., Southwest Texas State University; M.S. in Ed., Texas A & I University; D.Ed., North Texas State University.

Johnson, Maurice Allen, Associate Professor of Health and Physical Education. B.S., Minot State College; M.Ed., Springfield College; Ed.D., Arizona State University.

Keck, Theodore Frederick, Professor of Health and Physical Education and Chair of the Department of Health and Physical Education. B.S., Minot State College; M.S., Ph.D., University of Oregon.

Patton, Robert Edward, Professor of Health and Physical Education. B.S. in Ed., M.Ed., Southwest Texas State University; Ed.D., North Texas State University.

Scott, Charlotte Robinson, Associate Professor of Health and Physical Education. B.S., M.A., Ph.D., Texas Woman's University.

Smith, Jean Amelia, Professor of Health and Physical Education. B.S., M.S., McMurry College; D.P.E., Indiana University.

Wright, Betty Lee, Associate Professor of Health and Physical Education. B.S., Alabama College; M.Ed., Ed.D., The University of Texas at Austin.

Degree Programs

The mission of the graduate program in the Department of Health and Physical Education is to provide students with a broad base of knowledge and high level competencies in their selected areas of interest. The department offers graduate study culminating in these degree options: Master of Arts or Master of Education. The Master of Arts consists of at least 30 semester hours, including thesis, with a major of 18-24 hours in Physical Education and Health Education. The Master of Education in Physical Education, the Master of Education in Health Education, and the Master of Education in Health and Physical Education each consists of at least 36 semester hours, including a major of 21 hours and a 15 hour minor, or a split minor of 9 and 6 hours. The Master of Education with a major in Secondary Education and an emphasis on Coaching of Competitive Sports consists of at least 36 semester hours, 18 hours in Education and 18 hours in Physical Education courses.

The members of the graduate faculty of the department have derived their education and training from different universities and represent a variety of specializations.

Because the department has a large instructional program for the general university student in addition to broad undergraduate physical education, health education, and recreation major programs, the variety of activities for teaching specialties of assistant instructors is extensive.

Financial Aids Program. Assistantships are available to students who have expertise in a wide range of activities. Applications should be directed to the department Chair.

Courses Offered

Physical Education

5303 Seminar in Athletic Training. (3-0) Current trends in athletics and physical education concerning the care and prevention of injuries with special emphasis on therapeutic and rehabilitation techniques. Taping and bandaging will be practiced in a laboratory situation.

5304 Psychology for Motor Learning. (3-0) The nature of scientific research; theories of behavior development; learning and acquisition of motor skills; empirical principles of learning in relation to motor learning; and structural, physiological, and other factors in relation to motor skill performance.
5305 Advanced Course in Tests and Measurements in Physical Education. (3-0) Intensive study of existing tests in physical education and methods of test construction. Laboratory experiences are provided.
Prerequisite: Undergraduate course in tests and measurements, or equivalent.

5311 Programming in Adapted Physical Education. (3-0) The course is to assist the student in designing and implementing a physical education program for the handicapped and special populations.

*5321 Workshop for Teachers in Physical Education. (3-0) Current problems in physical education, intramurals, curriculum, public relations, and athletics.

5345 Supervision of Physical Education. (3-0) Basic principles of supervision of physical education; planning of programs and techniques of supervision, such as interviewing, conferences, evaluation procedures, and visitation procedures. Where possible, students are given opportunities to practice these techniques.

5346 Literature and Research in Physical Education. (3-0) Directed reading, reports, and discussions of the current literature in the field of physical education; a critical analysis of research techniques and the locations; and securing of information, together with the steps necessary to the solution of research problems in this field.

*5347 Problems in Physical Education. (3-0) May be taken by a student who desires to work on a research problem. The student gathers pertinent data and submits a report on the results of the research.
Prerequisite: Successful completion of Physical Education 5346.

5348 Organization of the Physical Education Program for the Elementary School. (3-0) Designed to help students overcome problems existing at the elementary level through program planning and organization. Discussions on problems of instruction, evaluation, philosophy and objectives to be obtained; role of the teacher in sharing responsibility with all other teachers and administrators; the unique contribution of physical education teachers in the educational process, the concept of the teacher as a community member, and suggestions for improvement of quality of professional education.

5353 Curriculum Development in Physical Education. (3-0) Planning and operation of the total physical education program with special attention to overcoming difficulties peculiar to this field. Assistance is given in preparing curriculum materials for specific purposes and situations.

5356 Experimental Designs in Physical Education. (3-0) Various experimental designs applicable to physical education are examined. Basic concepts of statistical analyses appropriate to the designs are discussed. Practical experience in use of computer programs in data analysis is given.

5360 Administrative Problems in Physical Education. (3-0) Problems of organization and administration of the program of physical education, intramurals, and extramurals. Brings together the phases of school administration and the relationship of the physical education program in the school and the community.

5361 Problems in Facilities and Equipment in Athletics and Physical Education. (3-0) Problems in planning, construction, operation, and maintenance of athletic and physical education facilities. Selection, budgeting, procurement, accountability and maintenance of equipment and supplies for athletics and physical education.

5370 Outdoor Education. (3-0) Introduction to outdoor education—its relation to the curriculum and the nature of experience-centered learning in the out-of-doors.

5371 Advanced Techniques in Outdoor Education. (3-2) Includes a study of advanced techniques in camping for schools with special emphasis on trip craft skills, back-packing skills, and survival techniques.

*May be repeated once for additional credit at discretion of the Chair of the department.
5380 Administering Leisure Delivery Systems. (3-0) Study of organizational concepts, a problem-solving model, board-staff relationships, personnel administration, management by objectives, and comprehensive planning in/and for the delivery of leisure services.

5390 Seminar in the Theory of Competitive Sports. (3-0) Concerned with the understanding and "why" of techniques and theories presently used in coaching competitive sports rather than their use and implementation. Topics such as psychological problems, legal aspects of coaching, recent training techniques and theory, Little League and junior high competition, as well as topics of student interest are included.

5391 Administrative Problems in Competitive Sports. (3-0) Problems of organization and administration of the various programs in competitive sports for men and women in junior high, secondary, and collegiate levels.

5399 or 5699 Thesis.
Prerequisite: Successful completion of Physical Education 5346.

Health Education

5310 History and Philosophy of Health Education. (3-0) Intensive study of historical and philosophical contributions to school health program development. Current political issues, public health issues, and influential cultural changes are examined.

5315 Evaluation and Test Construction in Health. (3-0) Study of existing health education tests, methods of test construction, curriculum and program evaluation procedures. Laboratory experiences are provided.

5320 Foundation of Public Health. (3-0) In-depth study of past and current public health programs. State Health Department personnel will appear as guest consultants to familiarize students with various existing health programs for Texas residents.

5321 Public Health Education. (3-0) Theory and process of public health education including planning, change, use of media, problem solving, and program evaluation.

5330 Workshops in Health Education. (3-0) A) Advanced teaching strategies; B) Curriculum development; C) Other topics as needed.

**5331 Seminar in Current Problems in Health Education. (3-0) Current national and international trends and problems in health which affect the school age group.

5335 Health Education Leadership. (3-0) Structured experiences for developing administrative leadership for Health Education programs. Included are leadership philosophy, staffing, programming, budgeting, public relations, facilities, and evaluations.

5340 Human Ecology. (3-0) Deals with biological relations between man, other living organisms, and their environment. Concerned with relationships between distribution of human groups with reference to material resources, and consequent social and cultural patterns.

5346 Literature and Research in Health Education. (3-0) Study and critical analysis of health literature including published and unpublished research, types of research, research design, data collection procedures, data treatment, general statistics, data analysis and interpretation.

**5347 Independent Study in Health Education Problems. (3-0) Allows for independent study of one or more problems in health education that hold special interest or offer opportunity for professional improvement and growth. Open on an individual basis by special arrangement with the department Chair.
Prerequisite: Health Education 5346.

5399 or 5699 Thesis.
Prerequisite: Successful completion of Health Education 5346.

**May be repeated once with different emphasis for additional credit.
Department of Special Education

Graduate Faculty

Benjamin, Barbaranne Joyce, Assistant Professor of Special Education. B.A., Mansfield State College; M.A., M.S., Ph.D., Pennsylvania State University.

Brooks, Alta Rae, Associate Professor of Special Education and Supervisor of Student Teaching. B.A., M.A., University of Kansas; Ph.D., University of Wisconsin.

Dolezal, Charles Henry, Professor of Special Education and Chair of the Department of Special Education. B.S., M.Ed., Ph.D., The University of Texas at Austin.

Mallard, Arch Richard, III, Associate Professor of Special Education. A.A., Tyler Junior College; B.A., M.A., North Texas State University; Ph.D., Purdue University.

Ward, Doyle Glynn, Professor of Special Education. B.A., Harding College; M.A., University of Illinois; Ph.D., University of Missouri.

Wheeler, Larry James, Assistant Professor of Special Education and Supervisor of Student Teaching. B.S., Oklahoma State University; M.Ed., Central State University; Ed.D., University of Oklahoma.

Degree Programs

The Department of Special Education offers a master's degree with a major in Special Education and offers concentrations in educational diagnostics, emotional disturbance, language/learning disabilities, mental retardation, and early childhood education for the handicapped. A major in Speech Pathology and Audiology is also available.

The training program is clinically oriented, and research is encouraged in all clinical areas. The University's speech, hearing, and language clinic operates on a twelve-month basis and is nationally known as a treatment center for communication, learning, and/or behavioral disorders. It is fully accredited by the Professional Services Board of the American Boards of Examiners of Speech Pathology and Audiology of the American Speech and Hearing Association. Graduate students in speech pathology and all other areas of special education utilize the clinic for research in the behavioral sciences in addition to clinical training experiences. Interaction among physicians, parents, families, classroom teachers, clinicians, and clients is maintained at all times.

In addition to the clinic, SWT maintains interagency relationships for supervised practicums of graduate students with a medical school, several community hospitals, a rehabilitation hospital, public schools, rehabilitation centers, and residential centers.

The graduate training program in special education is fully accredited by the Education Training Board of ASHA. Prerequisite for graduate study in special education is at least 24 semester hours of undergraduate background in special education.

If preprofessional training is sufficient, the Master of Arts degree may be obtained with 30 semester hours including a thesis; or the Master of Education degree with 36 semester hours and no thesis may be obtained. The non-thesis program is usually selected to ensure academic and practicum requirements for clinical competence.

Courses Offered

5301 Seminar in Speech Pathology. (3-0) Discussions of various areas of speech pathology with adaptation to individual needs and emphasis upon pilot studies.

5310 Selected Topics in Special Education. (3-0) In-depth study of selected topics of current interest in special education. Work done on independent study basis with faculty member and available only with permission of department.
5330  Language/Learning Disabilities. (3-0) Graduate introductory course in the area of language/learning disabilities. Language and learning models studied. Special emphasis given to the concept of developmental dyslexia.

5331  Seminar in Stuttering. (3-0) Course emphasizes description of characteristics of stuttering at various stages of the disorder, and theories and research in areas of etiology and management. Lecture and independent student review of literature.

5332  Cleft Palate and Voice Disorders. (3-0) Course deals with the anatomy and physiology of cleft palate and appropriate management techniques as well as with the characteristics and management techniques for other types of voice disorders.

5333  Language and Articulation Disorders in Children. (3-0) Normal development of speech and language contrasted with atypical development resulting in various types of articulation and language disorders. Articulation discussed as a phonological component of language.

5334  Diagnostic and Prescriptive Procedures for Disorders in Language/Learning and/or Behavior. (3-0) Procedures for evaluating and prescribing treatment for school children perceived as presenting problems in language/learning and/or behavior. Special emphasis placed upon developing sensitivity in observation of such children.

5335  Recognition and Informal Assessment of Special Education Problems in Early Childhood. (3-0) Designed for teachers and other personnel in Early Childhood Education. Prepares the student to recognize and make informal assessment of significant deviations in the areas of motor, cognitive, perceptual, sensory, communicative, and emotional development of the preschool child.

5336  Cerebral Palsy and Other Neuromotor Disabilities. (3-0) Covers the major clinical syndromes, such as Cerebral Palsy, which result from neurological damage or malfunctions. Specifically recommended for students of speech pathology and hearing therapy who have not had a course in neurological bases of communication at the undergraduate level.

5342  Aphasia and Related Disorders. (3-3) A study of language disabilities in children and adults.

5343  Advanced Clinical Practice. (3-0) For graduate students doing supervised clinical practice in the various areas of special education as indicated by section code (e) mental retardation, (f) physically handicapped or minimally brain injured, (g) speech and hearing therapy, (m) language/learning disabilities, (n) audiology, (o) emotionally disturbed, and (p) educational diagnostician. Supervised clock hours may be obtained with cases which stimulate an advanced level of specialized study. Special emphasis upon evaluative procedures.

5359  Phonetics of American English. (3-0) Course in phonology of the English language for the graduate student who has not had a previous course in English phonetics. The phonemes and the intonation and stress patterns of American English and its dialects will be studied.

5360  The Education of Exceptional Children. (3-0) A survey course to orient students to the program and problems in the education of all types of exceptional children. Field trips, lectures, and films supplement class lectures.

5362  Readings in Special Education. (3-0) Critical and thorough investigation of the literature in an area of (e) mental retardation, (f) physically handicapped or minimally brain injured, (g) speech and hearing therapy, (m) language/learning disabilities, (n) audiology, (o) emotionally disturbed, or (p) educational diagnostician; reported in a formal paper and discussed in seminar meetings with the appropriate instructor. Required of all graduate majors in areas of special education who are candidates for the Master of Education degree.
5363 **Differential Diagnosis of Communication Problems.** (3-0) Course in the nature and causes of communicative problems designed especially for educational diagnosticians, teachers of language/learning disabilities, and speech pathologists who need experience in identifying, evaluating, or prescribing therapy for persons with communication disorders.

5364 **Psychological Problems of the Mentally Retarded.** (3-0) Course dealing with the theories which attempt an explanation of intellectual deficiency. Etiologies and psychological mechanisms of mental retardation studied to provide bases for improvement in the performance of mentally retarded pupils.

5365 **Education of the Neurologically Impaired.** (3-0) Basic characteristics of physical disorders resulting in motor dysfunction and/or learning disabilities with special emphasis upon disorders deriving from neurological impairment; general principles for education pupils with such impairments in public schools. Visiting lecturers from medical and para-medical fields will assist in teaching this course.

5366 **Methods and Materials for Teaching Pupils With Specific Language Disabilities.** (3-0) Methods and materials for teaching elementary classroom subject matter such as reading, spelling, and arithmetic to pupils with physical handicaps. Special emphasis upon teaching the child with cerebral palsy and related disorders.

5367 **The Exceptional Child in the Family.** (3-0) Develops understanding and professional skill of special education teachers and clinicians in counseling parents of exceptional children. Parents of children enrolled in demonstration classes or in the clinic actively participate in the class.

5368 **Structured Language for the Slow Learner.** (3-0) Basic factors of oral and written English: vocabulary, syntax, rhythm, and intonation, and sound elements that create academic difficulties for pupils with specific language disorders derived from environmental influences or neurological impairment.

5389 **Internship Practicum.** (3-0) Laboratory and clinical teaching experiences in the areas of special education. When scheduled out of town, a special fee is charged; see the fee section of this catalog. The area will be indicated according to the following with the appropriate letter to be used as a section code: (e) mental retardation, (g) speech and hearing therapy, (m) language/learning disabilities, (n) audiology, (o) emotionally disturbed, (p) educational diagnostician.

5399 or 5699 **Thesis.**
School of Fine Arts and Communication

Department of Art

Graduate Faculty

Conroy, Michel Louise, Instructor of Art. B.F.A., Webster College; M.F.A., Louisiana State University. (Ceramics)

Greer, Carole Anne, Assistant Professor of Art. B.S., Kansas State University; M.F.A., North Texas State University. (Drawing, Printmaking)

Henry, Frances Louise, Assistant Professor of Art and Supervisor of Student Teaching. B.A., Sam Houston State University; M.A., California State University, Fresno; D.Ed., Arizona State University. (Art Education, Interrelated Arts, Drawing, Painting, and 3-D Design)

Kolbe, William DeForest, Professor of Art. B.S., Wisconsin State University; M.S.A.E., Illinois Institute of Technology. (Oils, Watercolor, and Art Education)

Marlow, Foster Leroy, Professor of Art. B.S. in Ed., M.S. in Ed., Eastern Illinois University; D.Ed., Pennsylvania State University. (Art Education, Crafts, and Design)

Nielsen, Per Erik August, Associate Professor of Art. B.A., M.A., University of South Florida; Ph.D., University of Texas at Austin. (Art Education, Printmaking, and Photography)

Row, Brian Gillow, Associate Professor of Art and Chair of the Department of Art. B.F.A., M.F.A., University of Colorado. (Sculpture, Drawing)

Upin, Munya Avigail, Instructor of Art. B.F.A., Drake University; M.A., San Diego State University. (Metalsmithing, Jewelry)

Williams, Tommy Carroll, Assistant Professor of Art. A.A., Lubbock Christian College; B.S., West Texas State University; M.Ed., Ph.D., University of Oklahoma. (Art History, Ancient, Medieval, Contemporary, and Pre-Columbian)

Wilson, Ryce Neal, Associate Professor of Art. B.F.A., M.F.A., University of Texas at Austin. (Painting, Watercolor, and Drawing)

Degree Programs

The Department of Art offers neither a graduate major nor a graduate minor. Graduate hours are offered in support of graduate programs in Education.

Courses Offered

*5321 Painting Studio. (3-3) Studio course urging independent involvement in a specialized area of painting.
   Prerequisite: 6 hours of painting.

*5323 Research in Art Theory and Practice for the Elementary Grades. (3-0) Research in art literature, studio, and teaching practices.
   Prerequisite: Art 3323, or teaching experience.

*5325 Research in Art Theory and Practice for Art beyond the Elementary Grades. (3-0) Research in art literature, studio, and teaching practices.

*May be repeated with different emphasis for additional credit.
*5327 Ceramic Problems. (3-3) In-depth exploration of expressive and technical aspects of clay and glazes. Kiln stacking and firing techniques. Prerequisite: Art 4327.

*5365 Jewelry. (3-3) Emphasis is on the experimental elements in jewelry making. Development of individual design emphasized. Prerequisites: Art 3365, Art 4365.

5393 History of Mexican Art. (3-0) The history of art and architecture in Mexico from colonial times to the present.

Department of Music

Graduate Faculty

Belisle, John Michael, Professor of Music. B.M., Oklahoma City University; M.M.Ed., D.Mus., Indiana University. (Voice, Opera)


Fulton, William Kenneth, Jr., Associate Professor of Music. B.M., North Texas State University; M.M., Texas Tech University. (Conducting, Music Education)

Ham, Harry Candidus (Harry Wayne), Associate Professor of Music. B.M., M.M., North Texas State University. (Voice)

Harrel, John Ralph, Professor of Music and Dean of the School of Fine Arts and Communication. B.M., Bethany College; M.A., Ed.D., Columbia University Teachers College. (Piano)

Hiebert, Arlis John, Professor of Music and Chair of the Department of Music. B.M., University of Oklahoma; M.M., Ph.D., George Peabody College. (Voice, Music Education)

Laumer, Jack Charles, Assistant Professor of Music. B.A., St. Olaf College; M.M., Manhattan School of Music. (Trumpet)

Neely, James Bert, Associate Professor of Music. B.M., M.M., The University of Texas at Austin; D.Mus., Indiana University. (Voice)

Pino, David James, Associate Professor of Music. B.M., M.M., Michigan State University; D.M.A., The University of Texas at Austin. (Woodwinds)

Reynolds, Martha Helen, Associate Professor of Music and Supervisor of Student Teaching. B.A., Manchester College; M.M., Pius XII Institute, Villa; Ph.D., North Texas State University. (Voice, Music Education)

Riepe, Russel Casper, II, Professor of Music. B.M., Southern Illinois University; M.A., Ph.D., Eastman School of Music, University of Rochester. (Theory, Composition)

Skinner, Douglas Durland, Assistant Professor of Music. B.M., M.M.F., North Texas State University. (Saxophone, Jazz Ensembles)

Stansberry, John Clayton, Assistant Professor of Music and Director of Bands. B.M.E., Drake University; M.M., Michigan State University. (Conducting, Music Education)

Waggoner, Thomas Henry, Instructor in Music and Supervisor of Student Teaching. B.M., M.M., The University of Texas at Austin. (Music Education)

*May be repeated with different emphasis for additional credit.
Whalin, John Robert, Associate Professor of Music. B.M., Oberlin College; M.M., D.Mus., Indiana University. (Piano)

Wolverton, Byron Adams, Associate Professor of Music. B.Mus., M.A., University of Missouri; Ph.D., Indiana University. (Keyboard, History, and Literature)

Woolsey, Timothy Dwight, Associate Professor of Music. B.A., Trinity; M.M., D.M.A., The University of Texas at Austin. (Piano)

Degree Programs

The Department of Music offers graduate work in music education, applied music, conducting, music theory and composition, and music history and literature, leading to the Master of Music degree with a major in Music-Performance or Music-Music Education. A flexible 36-hour program is offered which allows a choice of emphasis in any of the areas of music listed above. The program normally consists of a major of 21 hours and a minor of 15 hours. A thesis is not required; however, when theory, composition, history, or literature is chosen for emphasis, 6 to 9 hours of the degree are normally devoted to an appropriate special project. If applied music or conducting is chosen for emphasis, a recital is presented as a part of the program. Opportunities are provided for independent study with professors in their areas of specialization.

Financial Aids Program. Financial assistance is available to graduate students in the Music department through appointment as Assistant Instructors (with teaching duties in music fundamentals and applied music) or music assistants (with a variety of duties assisting with the instructional program of the department). For further information about the degree program and financial assistance, please contact the Music department.

Courses Offered

5121 Chamber Music. (3-0) Already existing ensembles that deal with chamber music through study and performance.

*5136, 5236 Graduate Music Workshop. (20 hours or more per week per credit hour) Workshops in music are scheduled at periodic intervals with emphasis in varying subject areas. One hour credit per week of workshop study is available. No more than four hours can be used toward a degree.

5192 Graduate Recital. (0-1) A full-length, public recital in the appropriate applied music area. Should be taken simultaneously with a final semester of applied music instruction by those students in performance degree plans.

5310 Music Literature of the Baroque. (3-0) Style characteristics and literature of the music of 1600-1750, with special emphasis on Bach and Handel.

**5313, **5317 Problems in Music Education. (3-0) Study of one or more problems in music education that hold special interest or offer opportunity for professional improvement and growth.

5314 Survey of Twentieth Century Music. (3-0) Emphasis upon music of the modern period and its development from music of earlier periods. Numerous examples of vocal and instrumental works in both large and small forms are used to illustrate twentieth-century styles and trends.

5320 Music Literature, Viennese Classical. (3-0) Style analysis of music literature from 1750 to 1830, with emphasis on Haydn, Mozart, and Beethoven.

5321 The History and Development of Choral Forms. (3-0) A study of the major choral forms, with special emphasis upon the mass and motet, as they have developed from the Renaissance to the Contemporary periods of music.

*May be repeated for additional credit.
**May be repeated once with different emphasis for additional credit.
5322 Instrumental Techniques and Materials. (3-0) Evaluation of teaching methods, materials, and literature of wind and string instruments. 
Prerequisite: Music 3217.

5327 Advanced Conducting. (3-0) Further development of baton technique, score reading, and rehearsal preparation, with special emphasis on analysis and musical styles. 
Prerequisite: Music 3217 or Music 3227.

5334 Introduction to Graduate Study in Music. (3-0) Techniques and materials of research, emphasizing bibliography, library usage, collection and interpretation of data.

5335 Piano Literature. (3-0) A survey of keyboard music with performance and discussion of works from various historical periods.

**5336 Seminar in Music Education. (3-0) A seminar course designed to acquaint the student with research techniques and procedures in music education. Formulation of a research problem, definition, design, procedure; technique for location, collection, qualification, and treatment of data. Each student is expected to carry out a practical or creative project or investigation.

5340 Music Literature, 19th Century Romantic. (3-0) Music literature of the period from 1830 to 1910, with analysis of styles.

5350 Musical Styles. (3-0) Developing a broader musical understanding through critical listening, technical analyses, and written assignments in various musical styles, including the late classical, romantic, and present eras.

5355 Pedagogy of Theory and Comprehensive Musicianship. (3-0) Developing teaching methods and broader understanding through critical study of materials, organization, techniques, and problems of music theory and comprehensive musicianship courses.

5360 Music in the United States. (3-0) A survey of the music and musical development in this country from pre-Columbian times to the present. Folk music, popular music, and jazz will be considered as well as traditional and experimental styles.

***5370 Selected Topics in Music. (3-0) Advanced study of an announced topic selected from these areas of Music: theory, history and literature, pedagogy. Topic and instructor will vary from semester to semester.

Applied Music

*5101, 5102 Applied Music: Graduate Organ. (0-1) Private instruction in music through performance.

*5105, 5106 Applied Music: Graduate Orchestral Instructions. (0-1) Private instruction in music through performance.

*5111, 5112 Applied Music: Graduate Piano. (0-1) Private instruction in music through performance.

*5115, 5116 Applied Music: Graduate Voice. (0-1) Private instruction in music through performance.

*5201, 5202 Applied Music: Graduate Organ. (0-1) Private instruction in music through performance.


*5211, 5212 Applied Music: Graduate Piano. (0-1) Private instruction in music through performance.

*5215, 5216 Applied Music: Graduate Voice. (0-1) Private instruction in music through performance.

*May be repeated for additional credit.

**May be repeated once with different emphasis for additional credit

***May be repeated for additional credit when topic varies.
*5301, 5302 Graduate Organ. (0-1) Private instruction in music through performance. Normally open only to students on a recital program.

*5305, 5306 Graduate Orchestral Instruments. (0-1) Private instruction in music through performance. Normally open only to students on a recital program.

*5311, 5312 Graduate Piano. (0-1) Private instruction in music through performance. Normally open only to students on a recital program.

*5315, 5316 Graduate Voice. (0-1) Private instruction in music through performance. Normally open only to students on a recital program.

Department of Speech Communication and Theatre Arts

Graduate Faculty

Barton, James Gabriel, Professor of Speech Communication and Theatre Arts, Emeritus. B.F.A., Nebraska State Teachers College; M.A., University of Michigan.

Benjamin, James Bruce, Associate Professor of Speech Communication and Theatre Arts. B.S., Dakota State University; M.A., Ph.D., The Pennsylvania State University.

Cheatham, Thomas Richard, Professor of Speech Communication and Theatre Arts and Chair of the Department of Speech Communication and Theatre Arts. B.A., Wayland College; M.A., Ph.D., Purdue University.

Clifford, John Edward, Professor of Speech Communication and Theatre Arts and Director of Theatre. B.S. in S.S., John Carroll University; M.A., St. Louis University; Ph.D., Michigan State University.

Coulson, J. Peter, Professor of Speech Communication and Theatre Arts. B.F.A., M.A., University of Arizona; Ph.D., University of Kansas.

Flemming, David George, Assistant Professor of Speech Communication and Theatre Arts. B.A., Adelphi College; M.A., Cornell University.

Gratz, Robert David, Associate Professor of Speech Communication and Theatre Arts and Associate Vice President for Academic Affairs. B.S., Lamar State College of Technology; M.A., Ph.D., Bowling Green State University.

Hannon, Robert Leroy, Professor of Speech Communication and Theatre Arts. B.F.A., University of Georgia; M.F.A., Ph.D., Tulane University.

Hargett, Sheila Ann, Assistant Professor of Speech Communication and Theatre Arts. B.A., Southwest Texas State University; M.A., Louisiana State University.

Maganza, Dennis Martin, Assistant Professor of Speech Communication and Theatre Arts. A.B., St. Louis University; M.F.A., University of Minnesota Theatre.

March, Frederick Joe, Assistant Professor of Speech Communication and Theatre Arts. B.A., M.A., Texas Tech University.

Pascoe, Charles Henry, Associate Professor of Speech Communication and Theatre Arts. B.S.Ed., University of North Dakota; M.S., Colorado State University; Ph.D., Southern Illinois University.

*May be repeated for additional credit.
Salem, Philip Joseph, Associate Professor of Speech Communication and Theatre Arts. B.S., Northern State College; M.A., Ph.D., University of Denver.

Schilling, Lester Lorenzo, Jr., Professor of Speech Communication and Theatre Arts. B.S., Western Michigan University; M.A., Columbia University; Ph.D., University of Wisconsin.

Williams, Marvin Lee, Associate Professor of Speech Communication and Theatre Arts. B.A., Hardin-Simmons University; M.A., Ph.D., University of Oklahoma.

Degree Programs

The Department of Speech Communication and Theatre Arts offers major and minor programs in both speech communication and theatre arts. You may select either a thesis or a non-thesis degree program. The thesis option Master of Arts degree program includes from 17 to 20 hours of course work in the major field, from 6 to 9 hours in a minor field, and 6 hours of thesis credit.

A non-thesis Master of Arts degree program is available to Speech Communication majors not planning to pursue further graduate work beyond the master's degree and for Theatre Arts majors whose emphasis is directing, design, costume, children's theatre, or creative dramatics. The non-thesis program consists of a minimum of 36 semester hours. At least 24 hours must be completed in your major. The remaining 12 hours may consist of courses from approved cognate areas. If you are interested in the non-thesis program, you should contact the Department for information concerning specific requirements.

You may choose to major and minor within the Department of Speech Communication and Theatre Arts, or you may select from the wide range of minors offered in other departments. All majors in the department must complete an introduction to graduate research course. Speech communication majors may concentrate in rhetoric and criticism, interpersonal and group communication, communication theory, organizational communication, or speech education. Theatre arts majors may specialize in stage directing, technical theatre, theatre history and criticism, or playwriting.

While it is possible to complete the degree requirements within a twelve-month period, many majors elect to extend the period over two years. This tendency is especially prevalent among theatre arts majors, because a large number of these courses involve extensive out-of-class practicum training periods. Students from several other departments select minors in either speech communication or theatre arts. Additionally, other students take some courses in the department as part of a composite minor in a Master of Education degree.

The department's graduate faculty is almost evenly divided between those with expertise in speech communication and those with expertise in theatre arts. Many of these faculty members have an active record of involvement in state, regional, and national professional associations as well as on-going activity in the area of published research or creative activities. The department is housed in the modern Speech-Drama Center, one of the best facilities for speech and drama activities in the entire Southwest. Graduate students in theatre arts are often actively involved in the University Theatre's production program.

Financial Aids Program. A large number of graduate majors in the Department of Speech Communication and Theatre Arts are employed as either Instructional Laboratory Assistants or as Assistant Instructors.
Courses Offered

Speech Communication

5310 Teaching of Speech and Drama. (3-0) Designed to meet the needs of teachers in the public schools. Emphasis is placed on a well-developed speech and drama program for the elementary and secondary schools, and on consideration of methods and materials for the diagnosing and improving of speech and drama. Students will be especially concerned with teaching speech or drama at the college level.

*5315 Directed Research in Speech Communication. (3-0) A course, corresponding to Speech 4315, with the same title, to be offered to certain graduate students to allow for independent study in a specific area for which a regular course is not available.

5316 Symbolic Processes of Human Communication. (3-0) To acquaint the student with the theory and research investigating how symbols are used in human communication. Topics of concern include an overview of the approaches and theories of language, empirical research investigating language, and recent research in content analysis and interaction process analysis of speech communication.

5318 Seminar in Interpersonal Communication. (3-0) A review of current research and a presentation of both rhetorical and behavioral perspectives on the area. Special emphasis on development of personal competencies in interpersonal communication situations.

5319 Organizational Communication. (3-0) A presentation of practical methods for dealing with the most common communication problems in the organization. Provides managers and consultants with an analytic framework for planning communication and organizational change.

*5321 Communication Evaluation. (3-0) An in-depth study of such evaluation techniques in the field of oral communication as speech criticism and statistical and experimental measurements, designed to qualify the prospective teacher to make critical judgments of the students' efforts.

5322 Rhetorical Theory. (3-0) A study of the history and works of classical, modern, and contemporary rhetorical theorists.

5323 Rhetorical Methodology. (3-0) A study of approaches to the analysis of public discourse directed toward establishing workable perspectives for students conducting rhetorical analysis.

*5325 Seminar in Human Communication Theory. (3-0) An examination of non-rhetorical theories of speech communication, including a survey of recent experimental evidence on human communication, persuasion, communication in negotiation, or advanced seminars extending the instruction in other graduate communication courses.

*5343 Twentieth Century Communication Strategies. (3-0) The analytical study of speeches, speakers, groups, movements, and rhetorical strategies in contemporary society.

5347 Seminar in Small Group Communication. (3-0) An examination of theories and research evidence about communication in the small group.

5361 Performance Techniques for Oral Interpretation. (3-0) A study of interpretation technique and program building for the individual reader, with emphasis on performance.

*May be repeated with different emphasis for additional credit.
Theatre Arts

5345 **Advanced Studies in Costume Design.** (3-0) Principles and elements of theatrical costume design. Includes experience in utilizing various rendering techniques in solving the costume problems for entire productions.

*5349 **Studies in Advanced Technical Theatre Production Techniques.** (3-2) The study of advanced contemporary staging, construction, and lighting techniques, with attention given to the use and operation of theatre equipment. Practical experience in University productions as required for one semester.

*5357 **Scene Design.** (3-2) Seminar on design, emphasizing the presentation and justification of executed renderings or models for selected plays. Emphasis on styles of staging, settings, lighting and properties, and their relationship to the complete production.

*5360 **Problems in Theatre.** (3-0) Designed to give supervised experience to qualified advanced students in theatre history, playwriting, directing, acting, technical, or other theatre problems. Research problems or actual production problems may be chosen.

5365 **Backgrounds of Modern Drama.** (3-0) An analysis of those developments in dramatic literature which formed the basis of modern drama. Primary emphasis will be on 19th and early 20th century European and American drama.

5367 **Studies in Dramatic Theory and Criticism.** (3-0) The study of dramatic theory and criticism from Aristotle to the present.

5368 **American Theatre and Drama.** (3-0) Studies in the development of the American theatre and drama from colonial days to the present.

*5369 **Contemporary World Theatre and Drama.** (3-0) Studies of current trends in world theatre and drama.

*5377 **Studies in Advanced Theatre Directing.** (3-0) A study of directors, theories, and problems of directing in the contemporary theatre.

*5387 **Directing Practicum.** (0-3) A study of and experience in choosing, preparing, and directing a theatre production from analysis to performance. A production in the University's Studio Theatre is required. Attention will be given to theatre organization and management.

Speech Communication or Theatre Arts

*5110 **Seminar in Speech and Drama.** (1-1) A graduate student majoring in speech or drama is required to absolve a minimum of two semester hours in this course in addition to the standard requirements for the advanced degree.

*5300 **Problems in Speech and Drama Research.** (3-0) An examination of problems and research techniques in speech and drama. Historical, critical, descriptive, and experimental research approaches will be surveyed, and basic procedures in research report writing will be considered.

*5320 **Directing Speech and Drama Activities.** (3-0) Designed to assist any teacher, whether of speech and drama or some other subject, in directing the speech and drama activities. During the course those in the class will actually direct debate, plays, declamation, and other activities.

*5370 **Studies in Advanced Creative Dramatics for Children.** (3-0) Studies of the methods of creative dramatics and their use in the classroom. Attention is given to creativity and creative teaching.

5399 or 5699 Thesis.

*May be repeated with different emphasis for additional credit.*
School of Health Professions
Department of Allied Health Sciences

Graduate Faculty

Bell, Deanne French, Associate Professor of Allied Health Sciences. B.S., M.S., Ph.D., The University of Texas at Austin.

Boone, Joy Louise, Associate Professor of Allied Health Sciences. B.S. in O.T., University of Kansas; M.A., University of Alabama; Ed.D., University of Houston.

Green, Don Carroll, Professor of Allied Health Sciences and Dean of the Schools of Applied Arts and Technology and Health Professions. B.S., M.S., Sam Houston State University; Ph.D., Texas A&M University.

Johnson, Charles Michael, Associate Professor of Allied Health Sciences. B.S., East Texas State University; M.S., Ph.D., Texas A&M University.

Knox, Elizabeth Singletary, Assistant Professor of Allied Health Sciences. B.S., M.A., Texas Woman's University.

Mooney, Robert Thurston, Associate Professor of Allied Health Sciences. B.S., M.Ed., Texas A&M University.

Upchurch, Marian Lee, Associate Professor of Allied Health Sciences. B.S., Northwestern University; M.P.H., University of North Carolina; D.P.H., The University of Texas at Houston.

Welborn, Ruth Buckhannon, Associate Professor of Allied Health Sciences. B.S.N., University of Texas School of Nursing; M.A., The University of Texas at San Antonio.

Degree Programs

The Department of Allied Health Sciences offers the degree of Master of Science in Health Professions with majors in Health Professions-Allied Health Education and Health Professions-Allied Health Research.

Health Professions-Allied Health Education. The major in Health Professions-Allied Health Education is designed to prepare educators for service in health-related institutions and agencies. The program of study builds upon the health specializations of the student with principles and concepts from educational theory and practice relevant to teaching and educational administration responsibilities encountered by health professionals.

Like the program in Health Care Administration, the keystone of the Allied Health Education program rests on the non-traditional approach to out-reach education, i.e., offering educational opportunities in locations of increasing health care demands. These opportunities are presented at times (late afternoon, evenings, and weekends) especially chosen to avoid conflict with the student's employment.

Majors. Generally, the degree requires a 23-semester hour block of courses in Allied Health Education, with a 15-semester hour block of courses (can be 9 and 6 hours split) in another approved graduate program. An internship option is also available.

Minors. A full minor of 15 semester hours, or 9 and 6 semester hour split minors may be taken in Health Professions-Allied Health Education.
Health Professions-Allied Health Research. The major in Health Professions-Allied Health Research is designed to provide a foundation in the philosophy and methodology of research, evaluation, computer applications, and quantitative management science techniques that will prepare the graduate to be a vital contributor to policy development in the health sciences. The focus is upon the practical application of quantitative and analytical methods of problem-solving and decision-making. The program is designed for entrance by students with diverse academic preparation, including both the health and non-health professional.

Majors. A degree with a major in Health Professions-Allied Health Research is generally a 50-semester hour, non-thesis program. Thirty-five semester hours of the above 50 are taken in Allied Health Research, with 15 semester hours taken from the student's chosen field of minor study. New classes are accepted in September of each year, with graduation for full-time students usually 24 months later.

Prerequisites: Program prerequisites for majors include four undergraduate courses: college algebra (Mathematics 1315); statistics (Mathematics 2328, Business 3333, Allied Health Science 3302, Political Science 3387, Sociology 3307, or Psychology 3301); computer statistical packages (Computer Science 3318 or Sociology 2315); and an undergraduate course in Fortran programming (Computer Science 2321 or Computer Science 2488).

Minors. A full minor of 18 semester hours, or 10 and 8 semester hour split minors may be taken in Health Professions-Allied Health Research. Many of the courses have specific applicability for students with majors in Health Professions-Health Care Administration or other administrative disciplines. Quantitative courses offered through the Allied Health Research program are particularly beneficial for students seeking further study in Ph.D. programs. Undergraduate prerequisites for a full 18-hour minor include at least one course in college algebra and another in statistics. Prerequisites for a split minor are negotiable depending upon selection of Allied Health Research courses.

Admission. In addition to meeting the general Graduate School admission requirements, applicants for either a major or full minor in Health Professions-Allied Health Research must have a satisfactory admission index as determined by both the applicant's GRE score and GPA on the last 60 undergraduate semester hours before the baccalaureate degree. The index is calculated by the formula: (200 times last 60 hours GPA) plus (GRE divided by 2). For admission with a major in Health Professions-Allied Health Research, you must achieve an index of at least 1150. For admission with a full 18-hour minor in Health Professions-Allied Health Research, you must achieve an index of at least 1100. Minimum GRE scores are 1000 for Health Professions-Allied Health Research majors and 900 for Health Professions-Allied Health Research minors. In addition, each applicant for a major in Health Professions-Allied Health Research will have an interview with the Health Research Admissions Committee as part of the admissions process. The above requirements may be waived if you already possess a master's or doctoral degree or if you have substantial work experience in research or evaluation positions. Applicants for a split minor in Health Professions-Allied Health Research need only meet minimum admission requirements for graduate study at Southwest Texas State University. All students are still required, however, to have an official Graduate Record Examination score submitted to the Office of Graduate Studies and Research as identified earlier in the Admissions section of this Bulletin.

Courses Offered

Allied Health Sciences

*5111 Problems in Allied Health Sciences. (1-0) An in-depth study of a single topic or a related problem being faced by practicing educators in the rapidly changing health care industry. Special emphasis will be placed on the topic's current relevance and its utilitarian value to the participant.

*May be repeated if topic differs.
5211 Problems in Allied Health Sciences. (2-0) An in-depth study of a narrow range of topics of related problems being faced by practicing educators in the rapidly changing health care industry. Special emphasis will be placed on the topic's current relevance and its utilitarian value to the participant.

5311 Research Methods in Allied Health Sciences. (3-0) A practical methods course in which the student will investigate the sources of library research data available in his/her own immediate area. The various techniques of original research will be explored and the student will be required to complete a research paper, with graduate level quality which will include library and original research work.

5312 Curriculum Development in Allied Health. (3-0) Development of a program of studies and curriculum. Students will receive practice in the planning, development, evaluation, and implementation of a specific health service related program. Prerequisite: Allied Health Sciences 4330, or approval of the Chair of the department.

5313 Techniques of Instructional Development and Evaluation. (3-0) Use of observational techniques in the analysis of instruction in health service institutions. Emphasis placed upon methods of development and improvement of instructional skills among health service staff and subsequent systematic observation and analysis of instruction.

5320 Educational Administration in Allied Health. (3-0) Organization and administration of professional staffs, positions, and relationships within the allied health environment. Special emphasis will be placed on duties of the department director/chair, faculty development, program evaluation, administration of curriculum development and curriculum changes, and the guidance/counseling program. Additional emphasis will be placed on professional ethics, staff welfare, community relations, office management, policy implementation, staffing, budget preparation, and the physical plant.

5331 Creative Application of Technology to Instruction in Allied Health. (3-0) A course designed to promote the creative and innovative application of audiovisual software and hardware technology to instruction in the allied health sciences.

5333 Community and Patient Health Education. (3-0) Designed to assist the health care specialist to develop formalized community and patient health educational programs. Emphasis placed on design of general community health, educational materials, and individualized health educational programs featuring specific health care problems.

5343 Training Needs Analysis. (3-0) Course will take the health care educator through a step-by-step process of determining and analyzing learning needs in a health care institution. Various approaches will be explored to determine the number and kinds of learning needs in an individual institution. Once discovered, the learning needs will then be translated into learning objectives.

5361 Trends and Issues in Allied Health Education. (3-0) A course designed to acquaint the student with the social and technological trends and issues that affect Allied Health Education. Different areas of concentration will be selected.

5440 Practicum Internship A. (8-0) Practical experience in development of curriculum units to meet actual needs of the allied health sciences. Emphasis will be placed upon needs assessment, objective identification, content planning, and evaluation. Additional emphasis will be placed upon the direction of curriculum development projects. Prerequisite: Allied Health Sciences 5312 and approval of the Chair or the graduate adviser in the department.

5441 Practicum Internship B. (8-0) Practical field experience in instruction to meet the needs of the allied health sciences. Emphasis will be placed upon the choice of instructional skills and methods to meet the needs of student population and content. Additional emphasis will be placed upon the direction and evaluation of instruction in field settings. Prerequisite: Allied Health Sciences 5440.

*May be repeated if topic differs.
**May be repeated with permission of the Chair of the department if the topic studied is different.
Allied Health Research

5111 Seminar in Allied Health Research. (1-0) A seminar course which allows beginning and advanced students to interact with faculty in an informal setting for discussions related to a variety of research and evaluation topics. Special research and evaluation skills or case studies from the health field may be discussed.

5161 Computer Fundamentals for the Health Sciences. (1-0) An examination of basic principles of computer hardware and software needed by the health administrator or health educator with little or no prior experience with computers. Applications of microcomputers to health agencies will be introduced. The BASIC programming language will be reviewed with examples and degree of exposure appropriate for the health environment.

5211 Problems in Allied Health Research. (2-0) An in-depth study of a narrow range of topics or a related problem in Allied Health Research. Special emphasis will be placed on the topics of current relevance and its utilitarian value to the student's future career.

5231 Bivariate Statistics and Health Research Methodology. (2-0) Integrates fundamental concepts and issues of univariate and bivariate statistics and research methods. Similarities and differences for opposite ends of the research-evaluation continuum are examined. Bibliographic research techniques are reviewed as they relate to research in the health and human services. Both quantitative and qualitative research concepts are examined as they apply to the analysis and evaluation of programs. Additional topics include research designs for bivariate observations and instrument design.

5233 Regression Analysis in the Health Sciences. (2-0) An introduction to multivariate analysis techniques appropriate to the health sciences. Multiple statistical packages such as the Biomedical package (BMD) will be utilized. The analysis of health data using least-squares analysis for the study of multiple regression and analysis of variance will be examined. Time series analysis will be studied for its utility in forecasting needs within health agencies.

Prerequisites: For Health Professions-Allied Health Research majors—Health Research 5231 and Fortran programming (Computer Science 2488 or Computer Information Systems 2321). For minors—prerequisites may be waived with the consent of the instructor.

5235 Categorical Health Data Analysis. (2-0) Statistical procedures for the analysis of cross-classified health data using log linear models will be examined. Multi-dimensional situations in health data will be studied, as will methods associated with incomplete contingency tables. Model selection and the assessment of goodness of fit will be applied to health sciences data.

Prerequisite: Health Research 5233 or equivalent course, or consent of the instructor.

5237 Medical Statistics. (2-0) A survey of important issues related to the collection and analysis of medical statistics. Emphasis will be placed upon the measurement of mortality, life table utilization, mortality in human population, disease registries, hospital statistics, and classification of diseases.

5239 Advanced Multivariate Health Data Analysis. (2-0) Advanced multivariate analysis techniques are examined for their utility to the health and social sciences. Statistical techniques examined include multivariate analysis of variance, canonical correlation, factor analysis, and discriminate analysis. Statistical computer packages and single purpose programs will be used for the study of each statistical procedure.

Prerequisite: Health Research 5233, or consent of instructor.

5241 Operations Research in Health Administration. (2-0) Adaptation and application of procedures and principles of operations research to the specific needs and requirements of health service institutions. Specific attention will be given to the improvement of
effectiveness and efficiency of management functions and the delivery of health services. Emphasis will be placed on techniques to optimize allocation of resources, inventory control, customer service/cost factors, and project management within health institutions.

Prerequisite: Approval of the instructor; Mathematics 3348 or Management 4330 desirable.

5243 Quantitative Health Decision Support. (2-0) Methods, concepts, and ideas of decision analysis under uncertainty are examined and applied to the health environment. Probability and the assessment of probabilities for events are discussed in light of their effects upon decisions in health care. Applications of Monte Carlo techniques, modeling, and risk analysis are examined for their improvement of health care services.

5251 Principles of Epidemiology. (2-0) Principles of epidemiologic method are examined as they may identify factors influencing health and disease in a population. Epidemiological methods are examined for their technique of hypothesis formation, retrospective and prospective methods, and sampling problems.

5263 Medical Applications of Computers. (2-0) An introduction for health professionals to application and potentials of computers in medicine. Topics covered include computer aided medical diagnosis, software for the medical office and clinic medical laboratory applications, and medical record systems, as well as other clinical or diagnostic applications. In-depth, specialized study of topics are to be undertaken depending upon the professional background of the student.

Prerequisite: Health Research 5161 or equivalent course; concurrent enrollment allowed.

5265 Applications of Computers in Health Administration and Health Education. (2-0) Applications of computers in the health environment are examined as they may improve efficiency and cost of administrative and educational services. Course prepares the non-computer scientist, health professional for communication with computer professionals. Two tracks are available, one for the health administrator, the other for the health educator. Administrative applications such as office automation, word processing, and telecommunications are introduced. The use of computers and the design of educational software are examined from the perspective of adult, patient, professional, and continuing health education in the health services.

Prerequisite: Health Research 5161 or equivalent course; concurrent enrollment allowed.

5267 Statistical Packages for Analysis of Health Data. (2-0) Multiple computer software packages will be examined for their utility in health data analysis. Sample health data sets are analyzed using similar procedures from different packages. Strengths and weaknesses of the various packages are contrasted as they are applied to the needs of health data analysis.

Prerequisite: Health Research 5231, or equivalent; concurrent enrollment allowed.

5269 Health Information Systems. (2-0) Critical examination of concepts and theories of medical information systems and their integrated support in functional areas of health institutions, such as pharmacy, clinical laboratory, radiology, food service, wards and clinics, patient administration, patient appointment scheduling and logistics.

5373 Instrument Design and Qualitative Methods. (3-0) An examination of instrument design and scaling issues of importance to health survey research. Of particular concern are the concepts of reliability and validity of health measures and the improvement of data quality in the evaluation of health services.

5375 Applied Health Research: Roles and Context. (3-0) Introduces skills for evaluating health care processes, programs, or materials that do not require complex statistical analysis. Students learn how to combine creativity and logic to produce meaningful evaluation reports. Contrast of the roles of different types of evaluators in a variety of settings provide the foundation for students to make important career decisions.
5381 Futures Research: Man, Technology, and Medicine. (3-0) Two optional tracks will be offered within one course: (1) a mathematical approach and (2) a social/technology impact approach. Both tracks will examine the various ideologies of futurists and the impact of global issues on the future man. Both tracks will also be introduced to the methods of future forecasting. The mathematical track will explore forecasting methods in more detail, while the social/technology track will become involved in a detailed study of substantive areas of futures research. Group or individual projects on futures forecasting will be required.

5490 Internship in Health Research and Evaluation. (4-0) Allows the student to reinforce skills learned in the classroom through the development of practical skills for the researcher/evaluator. Students are expected to work with key decision makers in an agency or institution to design, develop, and evaluate a specific area of study.

Department of Health Administration

Graduate Faculty

Belchic, Albert Mitchell, Assistant Professor of Health Administration. B.S., Louisiana State University; J.D., Southern Methodist University; M.S., Trinity University.

Conley, Francis Albert, Associate Professor of Health Administration. B.A., The University of Texas at Austin; D.D.S., Baylor University; M.S.H.P., Southwest Texas State University.

Gray, Stephen Eugene, Associate Professor of Health Administration. B.S., United States Military Academy; M.H.A., Baylor University; Ph.D., Peabody College of Vanderbilt University.

Khouri, Yvonne George, Associate Professor of Health Administration. B.S., B.A., Stetson University; M.S.H.A., Northwestern University.

Rappaport, Bernard, Professor of Health Administration. B.A., New York University; M.A., George Washington University; M.H.A., Baylor University. FACHA.

Seifert, Vernon Donald, Associate Professor of Health Administration and Chair of the Departments of Allied Health Sciences and Health Administration. B.S., Northwestern University; M.P.H., Tulane University.

Smith, Charles Harvey, Assistant Professor of Health Administration. B.S., California State Polytechnic College; M.P.H., University of North Carolina.

Smith, Robert Terry, Assistant Professor of Health Administration. B.B.A., M.B.A., The University of Texas at Austin.

Winfield, Darwin Eugene, Associate Professor of Health Administration. B.S., Louisiana Polytechnic Institute; M.S., Northwestern University.

Degree Programs

The Department of Health Administration offers the degree of Master of Science in Health Professions with a major in Health Professions-Health Care Administration.

Purpose. The Department of Health Administration offers courses designed to enhance the career mobility of persons in the health care professions, and to provide a solid base of academic and directed experiences for persons who may desire entry into the field of health administration.

Principle areas of study include Hospital and Health Service Finance, Problems and Seminars in Health Administration, Personnel and Labor Relations in Health Services, and other areas of study that may be deemed appropriate to the industry and the times.
Majors. Generally, three degree tracks are available to Health Professions-Health Care Administration majors, ranging from 38 to 48 semester hours. All three degree tracks require 23-30 semester hours to be taken in Health Administration. The first degree track requires an additional 15 semester hour minor (or 9 and 6 hour split minor) to be taken in any appropriate discipline. The second degree track requires the minor to be split with 10 semester hours in Allied Health Research and 6 semester hours in Allied Health Sciences. The third degree track requires an 18-semester hour minor in Allied Health Research. There is no thesis requirement for any degree track.

Minors. A full minor of 15 semester hours, or 9 and 6 semester hour split minors may be taken in Health Professions-Health Care Administration.

Admission. Applicants for a major in Health Professions-Health Care Administration must meet minimum requirements of the Graduate School, as well as review by the Health Administration Admission Committee.

Courses Offered

Health Administration

*5111 Topics in Health Administration. (1-0) An in-depth study of a singular topic or a related problem being faced by practicing managers in the rapidly changing health care industry. Special emphasis will be placed on the topic’s current relevance and its utilitarian value to the participant.

*5211 Topics in Health Administration. (2-0) An in-depth study of a narrow range of topics or related problems being faced by practicing managers in the rapidly changing health care industry. Special emphasis will be placed on the topic’s relevance and its utilitarian value to the participant.

5216 Health Institutions Budgeting and Financial Planning. (2-0) Course is designed to introduce students in health management at the graduate level to content, systems, and methods of budgetary and financial planning. Concepts, philosophy, and techniques of budgetary design, preparation, and management will be stressed in a group management setting.

Prerequisite: Health Administration 5314, or approval of instructor.

5231 Comparative Health Systems. (2-0) Course will analyze the nature, function, and composition of the health sector in developed and developing countries within the context of the economic and political environment that determines that sector.

**5310 Seminar in Health Administration. (3-0) Current trends and problems in health administration. Designed to place emphasis in selected areas such as administration, finance, and organization. A research paper and presentation is required of each student.

5314 Financial Management of Health Institutions and Systems. (3-0) A study of the financial operation of health care institutions and systems to include financial forecasting, management control systems, budgeting, and financing.

Prerequisite: Health Administration 4375. (An introduction to accounting course may meet this requirement with the Chair’s approval.)

5315 Health Care Management. (3-0) Designed specifically to improve the effectiveness of the technically oriented health care professional who desires to move into a management or supervisory position in a health care facility. This course deals with the essentials of managing human resources in the environment in which the health care professional will work. Specifically, the course will deal with human leadership, motivation, decision making, manager-employee relationships, problem solving, and other subjects and specific methods and techniques for achieving meaningful and productive relationships with subordinates in the health care environment.

*May be repeated if topic differs.

**May be repeated if area differs.
5317 Medical Jurisprudence. (3-0) A review of legal responsibilities of the health care professional, the legal controls imposed upon the professional and the institution. There will be a review of legal consents, patient's rights, and a broad range of the legal pitfalls that must be understood by all health care professionals and are of extreme importance to the health care supervisor.

5318 Personnel Administration and Labor Relations in Health Care Facilities. (3-0) Will present a study of personnel management in the health care facility and the atmosphere in which it functions. The health care facility will be surveyed as a system of human behavior. There will be a study of the supervisor role in interviewing, hiring, training, evaluating, promoting, and terminating of employees. Legislation affecting personnel in hospitals, nursing homes, and other health care facilities will be studied. A review of labor relations including collective bargaining and the activities of organized labor will be included in this course.

5319 Health-Care Delivery Systems: Project Design and Evaluation. (3-0) Principles and methods of health program design and evaluation; determining/defining health needs and demands; selection criteria for data applicable to problem definition, goal setting, and program/project evaluation methods. Applicable to health-care institutions, agencies, etc.

Prerequisite: Health Administration 5345, or approval of instructor.

5330 Economics of Health-Care Delivery Systems. (3-0) Course will focus on the role and influences of consumers and providers as they affect the costs of supplying health services. Sources of financing health services, public policies influencing availability, and financing of health services will be studied.

5340 Inter-Personal Relations in Health Care. (3-0) Course will focus on the development of attitudes and interpersonal perceptual skills essential to effective performance in any health care institution. The primary objective will be to increase the health care supervisor's and educator's sensitivity to the individual psychological needs of patients, their families, and employees. Upon completion of the course, the health care supervisor and/or educator should be able to instruct their own employees in the employee-patient relationship.

5345 Health Planning: Methods and Practice. (3-0) Study of planning theories and principles and their application to comprehensive health planning; systems development for regional health care. Analysis of the social, education, economic, and political factors which influence health planning. Review of national and state legislation for health planning and the problems of implementation of local, regional, and national levels.

5440 Practicum Internship. (8-0) Graduate practicum for students who are technically trained at the baccalaureate level. Students with a specialization in management will participate in a health service facility based practicum.

Prerequisite: Completion of 15 hours from degree plan.

***5441 Tutorials in Health Administration. (8-0) The tutorials are tailored to the particular interests and needs of individual students. They may take many forms—literature reviews, research projects, field trips, other special studies or learning experiences. The objective is program enrichment for the advanced student.

***May be repeated for credit with different emphasis and with permission of the graduate adviser.
School of Liberal Arts

Department of English

Graduate Faculty

Brunson, Martha Luan, Professor of English. B.S., Northwestern University; M.A., Ph.D., Texas Tech University.

Chavkin, Allan Richard, Associate Professor of English. B.A., Dickinson College; A.M., Ph.D., University of Illinois.

Deduck, Patricia Anne, Assistant Professor of English. B.A., State University of New York, Plattsburgh; A.M., Ph.D., Indiana University.

Gravitt, Garland Jack, Associate Professor of English. B.A., Baylor University; M.A., Southwest Texas State University; Ph.D., Southern Illinois University.

Grayson, Nancy Jane, Professor of English. B.A., Texas Christian University; M.A., Ph.D., The University of Texas at Austin.

Gross, Dalton Harvey, Professor of English. B.A., Luther College; M.A., Ph.D., Southern Illinois University.

Heaberlin, Dickie Maurice, Associate Professor of English. B.A., M.A., North Texas State University; Ph.D., The University of Texas at Austin.

Hennessey, Michael John, Associate Professor of English. B.A., Seattle University; M.A., Ph.D., Marquette University.

Hill, John Stanley, Professor of English. B.S., M.A., University of Kansas; Ph.D., University of Wisconsin.

Laird, Edgar Stockton, Professor of English. B.A., M.A., Southwest Texas State University; Ph.D., Rutgers, The State University.

Medford, Floyd Chester, Associate Professor of English. B.A., Abilene Christian College; B.D., The University of the South; Th.D., The School of Theology at Claremont, California; Ph.D., The University of Texas at Austin.

Parkin-Speer, Diane, Associate Professor of English. B.A., Lewis and Clark College; M.A., Bowling Green State University; Ph.D., University of Iowa.

Peterson, Norman Clair, Professor of English. B.A., M.A., The University of Texas at Austin; Ph.D., University of Iowa.

Ronan, Clifford John, Associate Professor of English. B.A., Amherst College; M.A., Ph.D., University of California at Berkeley.

Rosenbalm, John Olmsted, Associate Professor of English. B.A., M.A., Ph.D., North Texas State University.

Starling, Betty Ross, Assistant Professor of English and Supervisor of Student Teaching. B.A., Harding College; M.A., Ph.D., The University of Texas at Austin.

Stedman, Nathan Alexander, III, Associate Professor of English. B.B.A., The University of Texas at Austin; M.A., Texas Christian University; Ph.D., Florida State University.

Taylor, Mary Agnes, Associate Professor of English. B.A., Southwest Texas State University; M.A., San Francisco State College.
The Therese Kayser Lindsey Chair of Literature

The late Mrs. Louise Lindsey Merrick, philanthropist of Tyler, Texas, presented over half a million dollars to the Southwest Texas State University Foundation to create the Therese Kayser Lindsey Chair of Literature in memory of her mother, the late Therese Kayser Lindsey. A noted poet and patron of arts, Mrs. Lindsey attended Southwest Texas State Normal in the early 1900’s and graduated with the second graduating class in 1905. Mrs. Lindsey published four volumes of poetry and was instrumental in organizing the Poetry Society of Texas. Mrs. Lindsey’s portrait, shown above, is housed in the Alumni House on the SWT campus.

Dedicated April 11, 1978, with an address by John H. Fisher, the Lindsey Chair has fostered lecture series on such diverse topics as American Humor, the American Southwest, Contemporary Women Writers, and Texas Humor. Noted artists such as James Dickey, Carolyn Osborn, Lary McMurtry, Richard Wilbur, and John Henry Faulk have appeared in connection with these lecture series and other events sponsored by the Lindsey Chair of Literature.

The distinguished American scholar-teacher and long-time editor of *American Literature*, Arlin Turner, was the first full-time Lindsey Professor (1979-1980). During Professor Turner’s tenure, the department sponsored a Conference on American Humor featuring such well-known scholars as John Gerber, J. A. Leo Lemay, Brom Weber, and Hamlin Hill. The department will strive to maintain the tradition of excellence established by Professor Turner during his service at Southwest Texas State University.
Thompson, Robert Bryan, Assistant Professor of English. B.S. in Ed., B.A., The University of Texas at Austin; M.A., Stephen F. Austin State University; Ph.D., The University of Iowa.

Walts, Robert Warren, Professor of English. A.B., Newark College of Rutgers University; A.M., Ph.D., College for Men, Rutgers University.

Wimsatt, Mary Ann, Assistant Professor of English. A.B., Stetson University; M.A., Ph.D., Duke University.

Wittig, Susan W., Professor of English and Vice President for Academic Affairs. B.A., University of Illinois; Ph.D., University of California.

Degree Programs

Majors. The Department of English offers two graduate degrees for majors: (1) the Master of Arts degree requiring earned credits for a minimum of 30 hours of work that includes a 6 hour thesis and 6 to 9 hours in a minor and (2) the 36-hour non-thesis Master of Education degree requiring a 21 hour concentration in English and a 15 hour minor (which may be split into minors of 6 and 9 hours). With departmental approval, you may structure several acceptable patterns of work under each degree plan. The Master of Education degree serves especially well secondary and community college teachers who wish to include the pedagogically oriented courses offered by the department.

Highly qualified students may apply for permission to substitute a creative writing project for the Master of Arts degree's thesis requirement. Inquiries on this point should be addressed to Dr. Norman Peterson.

The Department of English participates in the Interdisciplinary Studies graduate programs, particularly in the linguistics and effective communications courses. Persons interested in this program should consult Dr. Alex Stedman.

Minors. Candidates for the Master of Education in English who elect to take a split minor may take a nine-hour English/Secondary Education/Reading Education pedagogical minor comprised of Education 5324, Teaching Reading in Secondary School and 6 hours of English courses selected from English 5300, 5310, 5383, 5384, 5387.

If your major study interests are in fields other than English, you are encouraged to consult with the English graduate adviser, Dr. Robert W. Walts, about selecting courses for a minor in English to lend special support to the major field of study.

Financial Aids Program. Graduate students in English may apply to the department for appointment as either Assistant Instructors (T.A.'s) or Instructional Assistants. Those appointed to either type of teaching devote half time to teaching duties and half time to graduate studies. Inquiries and applications should be directed to Dr. Martha L. Brunson, Chair of the Department of English. Normally, applications should be filed by March 1 for appointments in the fall.

Courses Offered

†5300 Language Problems in a Multicultural Environment. (3-0) An introduction to the study of multicultural and/or multilingual language and linguistics, with special emphasis on the descriptive, psychological, social, and semantic aspects.

*5310 Studies in English Language and Linguistics. (3-0) A study of the English language, with special attention to the areas of phonology, morphology, syntax, semantics, dialectology, sociolinguistics, normal language acquisition, and/or writing and spelling systems.

*†5318, *†5319 Effective Communications. (3-0)

*5321 Contemporary Fiction. (3-0)

†May not count as credit toward meeting minimum requirements for the Master of Arts in English without permission of the Chair of the Department of English.

*May be repeated once with different emphasis for additional credit.
**5323 Eminent Lives in Literature. (3-0) A study of selected works in autobiography and biography with special attention to the art forms used in these works.

*5325 Reflections of Life in the Lore and Literature of the Southwest. (3-0)

*5331 Studies in American Poetry. (3-0)

*5332 Studies in American Prose. (3-0)

*5353 Studies in Medieval English Literature. (3-0)

*5354 Studies in English Renaissance Literature. (3-0)

*5359 Studies in Eighteenth Century Literature. (3-0)

*5364 Studies in the English Romantic Movement. (3-0)

*5366 Studies in Victorian Poetry. (3-0)

*5368 Studies in Victorian Prose. (3-0)

*5371 Studies in British Poetry: 1880-1940. (3-0)

*5381 Studies in Modern British and American Drama: 1900-Present. (3-0)

*5383 Teaching English Composition in Middle and Secondary Schools and Community Colleges. (3-0)

***†5384 Literary Analysis for Middle and Secondary School and Community College Teachers. (3-0)

***†5387 Concepts, Materials, and Methods of Teaching English. (3-0)

†5388 Studies in Literature for Children or Adolescents. (3-0)

*5395 Problems in Language and Literature. Open to graduate students on an individual basis by arrangement with the department.

5399 or 5699 Thesis.

Department of Geography and Planning

Graduate Faculty

Augustin, Byron Dale, Associate Professor of Geography and Planning. B.A., Hastings College; M.A., The University of Kansas; D.A., University of Northern Colorado.

Averack, Richard, Assistant Professor of Geography and Planning. B.A., Shorter College; M.A., Georgia State University; Ph.D., Western Ontario.

Boehm, Richard Glen, Professor of Geography and Planning and Chair of the Department of Geography and Planning. B.S. in Ed., M.A., University of Missouri-Columbia; Ph.D., The University of Texas at Austin.

Brandes, Donald, Assistant Professor of Geography and Planning. B.A., University of Florida; M.A., University of Calgary; Ph.D., University of Florida.

Gildea, Ray Yeakle, Jr., Professor of Geography and Planning. B.S., Cornell University; M.A., Ed.D., University of Virginia.

Harrison, James Douglas, Professor of Geography and Planning. B.A., M.A., University of Denver; Ph.D., University of Oklahoma.

Hellman, Allen David, Professor of Geography and Planning. B.A., Michigan State University; M.A., Ph.D., The University of Michigan.

Larsen, Robert Douglas, Associate Professor of Geography and Planning. B.S., University of Wisconsin at Superior; M.S., Ph.D., University of Wisconsin at Madison.

†May not count as credit toward meeting minimum requirements for the Master of Arts in English without permission of the Chair of the Department of English.

*May be repeated once with different emphasis for additional credit.

**May not be taken for graduate credit if the undergraduate companion course (4000 level) has been completed.

***May be repeated with different emphasis for additional credit.
Petersen, James Frederick, Assistant Professor of Geography and Planning. B.A., M.A., California State University—Chico.

Visser, Sent, Assistant Professor of Geography and Planning. B.A., M.A., The University of Auckland, New Zealand; Ph.D., Ohio State University.

Degree Programs

The Department of Geography and Planning offers the Master of Applied Geography degree requiring 39 hours of coursework. This includes a core of 9 hours that all students must take, and a 15-hour concentration in either: (1) physical and environmental studies; (2) land/area development and management; or (3) applied cartography. Instead of selecting a concentration, you may select to pursue a general geography degree from the courses offered within the three concentrations. You must also have a 6-hour resource area from outside the department. Thesis or internship options may be chosen to complete the degree. If you choose to write a thesis, you must also complete a 3-hour internship course. If you select the internship option, you must enroll in a 3-hour directed research course in lieu of the thesis.

Program Goals. The Master of Applied Geography degree program is designed to train geographers to use their skills and background knowledge to solve real-world problems with geographic dimensions. Applied Geography includes such subfields as environmental management, land use planning, location analysis, land management, transportation systems planning, applied physical geography, geographic aspects of environmental law, and cartography. The degree is intended to provide terminal training to prepare the student for middle management level employment, but the research and analysis skills which are taught in this program are also excellent training for persons who intend to proceed to doctoral work in appropriate fields.

Financial Aids. Teaching Assistantships and Work-Study Programs are available to qualified candidates.

For more information about the degree program and financial assistance, please contact the graduate adviser, Department of Geography and Planning.

Courses Offered

5300 Research Design and Techniques. (3-0) Students will be introduced to appropriate research methodologies for applied geographers. Emphasis will be placed on the scientific method, productive library research, data collection and analysis, field work, effective writing, and the nature of graphic representation.

5301 Quantitative Methods in Geography. (3-0) An introduction to basic descriptive and inferential statistics as applied to geographic data and problems. Students will learn how to use the Statistical Package for the Social Sciences (SPSS) on an interactive computer terminal.

5309 Applied Geographic Analysis. (3-0) A survey of typical spatial problems that are of interest to geographers. Course will include topics associated with the nature and impact of regional development, location of public and private facilities, and environmental management. There will be problems from the physical and cultural environment.

5312 The Planning Function and Process. (3-0) The nature, purpose, and scope of planning in the United States, with emphasis on city and town planning. Selected topics for discussion will include community inventory and analysis, the formulation of goals and policies in the development of the comprehensive plan, and plan implementation.

5313 Environmental Management. (3-0) An analysis of the major causes of environmental deterioration together with the basic strategies of dealing with these problems.

5314 Geographic Elements of Environmental Law. (3-0) A survey of environmental laws related to land, air, and water pollution. The nature of environmental problems will
be studied as they relate to urbanization, industrialization, land development, noise, radiation and solid waste management, and the laws and guidelines that have been passed to alleviate such problems.

5315 Regional Analysis. (3-0) The focus of this course is the region. Case studies will be selected from political and functional regions. Course content will include such information as demographics, economy, physical and social environments, transportation, and foreign trade. The emphasis will be on development and on impediments to development.

5316 Applied Physical Geography. (3-0) A survey of methods and techniques used in the collection, analysis, and evaluation of information relating to problems within the physical environment. Emphasis will be on problems characteristic of particular geographic locations or specific environmental settings. The role of human activities will be considered as an integral part of the earth system.

5323 Location Analysis. (3-0) Factors of importance in the decision-making process of locating both public and private sector facilities. Attention will be paid to the location of manufacturing activities, commercial enterprises, and a variety of social service facilities.

5335 Directed Research. (3-0) A course designed to allow the student to pursue a topic of applied geographic research under the direct supervision of a professor. Generally, the topic will be something that is not customarily dealt with in an organized class. Group research is encouraged. Topics should be selected that involve library research and field investigation. Progress is monitored regularly by the supervising professor.

5336 Transportation Systems. (3-0) The principles and procedures of transportation planning and management will be examined. Transport theory will be discussed as well as the characteristics of various model systems. The effectiveness of federal, state, regional, and local programs and policies will be analyzed. Special emphasis will be placed on mass transit, particularly in view of changes in urban structure and the high costs of energy.

5338 Land Use Planning. (3-0) Students will be instructed in all phases of the planning process, beginning with the assessment of needs and proceeding through the establishment of goals and objectives, data collection, information processing and analysis, model building and the generation of alternative land use plans, selection of the best alternative, policy determination, program implementation, and information feedback. All practical techniques involved in land use planning will be considered.

5339 Land Development and Management. (3-0) A review on the economics, alternate options and responsibilities in land development. Major topics include management of growth, growth pressures, and local government response to such dynamics as suburban sprawl, condominium conversions, and rapid changes in the best use of the land. Attention is paid to land valuation and appraisal. Techniques of petroleum land management will be demonstrated.

5351 Regional Waste Management. (3-0) The principles of effective solid waste planning and management will be examined as they relate to such activities as waste generation, storage and collection, transfer and transportation, processing and volume reduction, resource conservation and recovery, the disposal of wastes, and the handling of special wastes, particularly those of a toxic and hazardous nature.

5360 Seminar in Planning Problems. (3-0) A critical and in-depth examination of several of the problem areas currently facing the planner.

5370 Seminar in Applied Physical Geography. (3-0) Critical analysis of theories, models and techniques of physical geographic research with the focus on application to real-world problems.

5380, 5680 Internship. (3-0 or 6-0) Application of techniques of applied geography in an actual on-the-job setting. Internships will be arranged and supervised by individual professors.

5395 Problems in Applied Geography. Designed to consider a selected topic relating to applied geography. Emphasis on the practical application of geographic tools, with
individual or group participation in a specific project. Course topics may vary depending
on student and faculty interests, and may apply to any of the three graduate tracks: physical-environmental, land area development and management, or cartography.

5408 Applied Cartography. (2-4) Application of methods used by government agencies and commercial map publishers for the compilation and production of finely detailed maps for long printing runs, such as topographic sheets, roadmaps, and atlases. Course will focus on the use of scribecoats, peelcoats, and photographic methods for compiling linework, point systems, area shadings, and lettering into a cartographic composition. Included will be methods by which maps can be used to display applied geographic data.

5416 Photogrammetry and Remote Sensing. (2-4) Air photo interpretation of geographic phenomena. Remotely sensed data will be transcribed onto positive-print maps. Students will be encouraged to utilize the department’s wide variety of laboratory equipment. Students will be introduced to the use and interpretation of satellite imagery (ERTS, Landsat).

5417 Computer Cartography. (2-4) The use of the computer to produce graphic compositions for geographic research and map making. Course will concentrate primarily on computer mapping, but will also cover means for producing types of charts and graphs that are particularly appropriate for use with geographic data.

5430 Cartographic Field Methods. (2-4) Course will emphasize common field techniques necessary in the construction of accurate maps. Various kinds of data collection techniques will be presented. Surveying instruments will be used. A field camp will be organized that will require appropriate techniques for data collection for mapping and field research in a local area.

5699 Thesis.

Department of History

Graduate Faculty

Anderson, William Woodrow, Professor of History. B.A., Baylor University; M.A., Ph.D., The University of Texas at Austin. (Latin America)

Brunson, Billy Ray, Professor of History. B.A., M.A., Ph.D., Texas Tech University. (Diplomatic)

Craddock, Emmie, Distinguished Professor of History, Emeritus. B.A., Rice University; M.A., Ph.D., The University of Texas at Austin. (Social and Intellectual)

Dunn, Dennis John, Professor of History. B.A., M.A., John Carroll University; Ph.D., Kent State University. (Russia, East Europe)

Jager, Ronald Burke, Professor of History. A.B., M.A., Baylor University; Ph.D., The University of Texas at Austin. (Constitutional, Urban)

Josserand, Frank Butler, Professor of History. A.B., M.A., Baylor University; Ph.D., The University of Texas at Austin. (Modern Europe, Germany)

Kissler, Betty Jane, Professor of History. B.A., University of Colorado; M.A., Colorado State College; Ph.D., The University of Texas at Austin. (Latin America)

Liddle, William David, Associate Professor of History. B.A., George Peabody College for Teachers; M.A., Ph.D., Claremont Graduate School. (Early America, 18th Century England)

Pohl, James William, Professor of History. B.A., M.A., North Texas State University; Ph.D., The University of Texas at Austin. (Military)
Pool, William Clayton, Professor of History. B.A., M.A., Ph.D., The University of Texas at Austin. (Texas, Frontier)

Swinney, Everette, Professor of History. B.A., Ohio Northern University; M.A., Pennsylvania State University; Ph.D., The University of Texas at Austin. (Reconstruction, Historiography)

Wilson, James Arthur, Professor of History and Acting Chair of the Department of History. B.A., M.A., Ph.D., University of Arizona. (American Southwest)

Degree Programs

The Department of History offers the Master of Arts degree and the Master of Education degree. Normally, the Master of Arts consists of 24 hours of History, including thesis, and 6 hours of graduate work from a minor field. The Master of Education degree consists of at least 21 hours of History and 15 hours of work from a minor field or a split minor with 9 hours from one field and 6 hours from a second field.

Admission Policy. Unconditional admission to departmental programs is based on a 3.0 or higher average on 24 hours of background (undergraduate) work in History for those seeking a graduate major and a 3.0 average on 18 hours for those seeking a graduate minor. In rare situations, conditional admission may be available for students with grade point averages below 3.0 in History.

Purpose. The graduate program in History is designed to prepare students for careers in professional history (teaching and/or research and writing) and to provide a general liberal arts education for students aiming for positions in business, journalism, government service, and the like. Emphasis is more or less equally placed on the acquisition of historical information and the skills and tools of research.

Financial Aids Program. Graduate assistantships and assistant instructorships are available to capable students. Normally, beginning graduate students start as graders in large sections of the American History survey and then, in the second year, teach two small sections of their own.

Interested students should contact the Chair or the graduate adviser in the Department of History or write and request the bulletin, Graduate Study in History.

Courses Offered

5310 Problems in Modern European History. (3-0) A seminar based upon selected topics in the history of Europe since 1870.

5313 Problems in Early American History: The Age of the American Revolution. (3-0) A seminar based upon selected topics in the Revolutionary and Early National periods of American history.

5318 Eighteenth Century England: From the Glorious Revolution to Waterloo. (3-0) A seminar based upon selected topics in political, social, intellectual, and economic history of England from 1688 to 1815.

5321 Seminar in the National Period of Latin American History. (3-0) The history of Latin American countries from the period of their independence to the present. Topics will vary, allowing both a study by country (or countries) and an institutional treatment of the general area.

5322 Seminar in Colonial Latin American History. (3-0) The colonial history of Latin America approached through a study of the following aspects: aboriginal and Iberian backgrounds; discovery and exploration; political, economic, social institutions of the Ibero-American empires; the independence movements.

5335 Twentieth Century Russia. (3-0) A seminar based on selected topics in recent Russian history.
5336  **East European History.** (3-0) A seminar based on selected topics in recent East European history.

*5342  **Problems in the Social and Intellectual History of the United States.** (3-0) A seminar based upon selected topics in the intellectual and social history of the United States.

5347  **Problems in Texas History.** (3-0) A seminar based upon selected topics in the history of Texas.

5348  **Problems in the Diplomatic History of the United States to 1898.** (3-0) A seminar based upon selected topics in the early diplomatic history of the United States.

5349  **Problems in the Diplomatic History of the United States since 1898.** (3-0) A seminar based upon selected topics in recent American diplomatic history.

5350  **Problems of the Frontier in American History.** (3-0) A seminar based upon selected topics in the history of the frontier in American development.

5351  **Problems in Modern American History.** (3-0) A seminar based upon selected topics in United States history since 1877.

5353  **Problems in Greater Southwestern History.** (3-0) A seminar based upon selected topics in the history of the Greater American Southwest.

5357  **The Gilded Age.** (3-0) A seminar based upon selected topics in late nineteenth century American history.

5360  **American Historiography.** (3-0) A study of the literature of American history with some attention to the philosophies of history and the principles of historical research.

5362  **Problems in American Military History.** (3-0) A seminar based upon selected topics in the military history of the United States.

5365  **Seminar in Problems of Contemporary Europe.** (3-0) An intensive study of problems of Europe since 1919, based on independent research and writing by the student.

5367  **Problems in the American Civil War.** (3-0) A seminar based on selected topics in the American Civil War.

5368  **The Era of Reconstruction, 1865-1877.** (3-0) A seminar based upon selected topics in post-Civil War American history.

**5390 **  **Problems in Historical Research.** (3-0) This course is open to graduate students on an individual basis by arrangement with the department.

5399 or 5699  **Thesis.**

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**Department of Modern Languages**

**Graduate Faculty**

**Brister, Louis Edwin**, Professor of German. B.A., Mississippi State University; M.A., Ph.D., The University of Texas at Austin.

**Carlisle, Charles Richard**, Professor of Spanish and Chair of the Department of Modern Languages. B.A., M.A., Ph.D., The University of Arizona.

**Champion, James Joseph**, Associate Professor of Spanish. B.S., Michigan State University; M.S., Ph.D., University of Michigan.

**Davis, Richard Lee**, Associate Professor of Spanish. B.A., M.A., Ph.D., The University of Texas at Austin.

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*May be repeated with different emphasis.

**May be repeated with the approval of the Chair of the department.
**Degree Programs**

The Master of Arts in Teaching is designed specifically to meet the needs of foreign language teachers at the secondary and community college levels. It differs significantly from the traditional M.A. degree program in that it features a six-week internship instead of the traditional thesis. The program provides language teachers with an opportunity to reinforce their competence in the foreign language skills, their familiarity with the foreign culture, and their mastery of current language teaching methods. The M.A.T. degree entails 15 hours concentration in the language subject area, 9 hours of linguistics, 6 hours in a supporting area, 6 hours of internship and foreign study, and a minimum reading knowledge of a second foreign language. The program is specifically oriented toward language teaching; it emphasizes practice as well as theory, and the application of knowledge as well as research.

The Master of Arts degree with a major in Spanish is available to students who wish to engage in a more traditional program of literary and language studies. This degree entails 21 to 24 hours in Spanish, including the thesis, and 6 to 9 hours in a supporting area.

**Courses Offered**

**Applied Linguistics and Language Learning**

5311 **Applied Linguistics.** (3-0) Introduction to language theories and their implications for second language teaching; comparison of native and target languages; and applications of linguistic principles to teaching methods.

5313 **Language Methods, Media, and Testing.** (3-0) Study of current methods in second language teaching: training and practice in writing performance objectives and instructional sequences; use and demonstration of modern media and techniques in teaching; and testing language skills.

5315 **Psycholinguistics.** (3-0) Studies and comparisons of first and second language acquisition, aspects of bilingualism, interrelationship of language and culture, and their implications for the language learner.

5390 **Individual Studies in Applied Linguistics and Language Learning.** (3-0) This course is generally open only to graduate students with special needs. Students select a topic in line with their special interests and requirements.

Prerequisites: Formal application for the course in the semester before it is to be taken and approval by the Chair of the Department of Modern Languages.

*May be repeated once with different emphasis for additional credit.*
### French

**5304 Studies in the French Language.** (3-0) Studies in the history and structure of modern French.

**5305 Studies in Literary Genres.** (3-0) A study of the development of the French novel, poetry, correspondence, and essay.

**5306 Studies in Early French Culture and Thought.** (3-0) Various cultural themes in the works of representative scholars, writers, and artists from the Middle Ages through the eighteenth century.

**5307 Studies in Modern French Culture and Thought.** (3-0) Various cultural themes in the works of representative scholars, writers, artists, and in the media from the the nineteenth century and twentieth century.

**5309 Advanced Conversation, Composition, and Grammar.** (3-0) Course designed to improve and refine oral and written skills, based mainly on contemporary mass media materials.

**5390 Studies in French Culture, Language, or Literature.** (3-0) Offers students an opportunity to pursue independent studies in special areas of interest beyond those of other catalog courses. Course is generally available only to graduate students with special needs.

- Prerequisite: Approval by the Chair of the department.
- Applications must be submitted prior to the registration period each semester.

**5600 Internship and Foreign Study.** (6-0) An independent study project of at least six weeks duration at a foreign institution, consisting of lectures, observations, and interviews relevant to the student's major and the interests of the language teacher.

- Prerequisite: Completion of all course requirements for the Master of Arts in Teaching with a major in French. (An intensive French program in this country may be substituted, with departmental approval).

### German

**5304 Studies in the German Language.** (3-0) Studies in the history and structure of modern German. Topic A.: History of German with emphasis on developments that underlie problem areas in modern German. Topic B.: Structure of modern German with attention given to problems in the teaching of German.

**5305 The Age of Revolution.** (3-0) An intensive examination of the society, culture, and politics of the period, emphasizing literary works of Enlightenment, Classicism, and Romanticism, and encompassing a survey of the periods of a) Despotism and Idealism, and b) Romanticism. Collateral readings and reports.

**5306 Foundations of German Civilization.** (3-0) An intensive study of the development of German culture and civilization found in extant works of the periods, encompassing a survey a) from the Beginnings to the Reformation, and b) from the Reformation to the Age of Absolutism. Collateral readings and reports.

**5307 Modern German Culture and Literature.** (3-0) A comprehensive investigation of the forces that shaped modern Germany as reflected by significant works of major writers and thinkers of the periods a) from 1848 to 1918, and b) from the Weimar Republic to the Present. Collateral readings and reports.

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*May be repeated once with different emphasis for additional credit.

**May be repeated with different emphasis for additional credit.
*5309 Advanced Conversation, Composition, and Grammar. (3-0) A course designed to improve oral and written skills. Topic A: Conversation: Practice based mainly on contemporary mass media materials. Topic B: Grammar and Composition: Practice in translation, stylistics, and free composition.

*5390 Studies in German Culture, Language, or Literature. (3-0) Offers students an opportunity to pursue independent studies in special areas of interest beyond those of other catalog courses. Course is generally available only to graduate students with special needs.

Prerequisite: Approval by the Chair of the department.

Applications must be submitted prior to the registration period each semester.

5600 Internship and Foreign Study. (6-0) An independent study project of at least six weeks duration at a foreign institution, consisting of lectures, observations, and interviews relevant to the student’s major and the interests of the language teacher.

Prerequisite: Completion of all course requirements for the Master of Arts in Teaching with a major in German. (Candidates may substitute an intensive German program conducted in the United States, with departmental approval).

Spanish

5304 Studies in the Spanish Language. (3-0) Studies in the history and structure of modern Spanish.

*5306 Studies in Spanish Peninsular Literature. (3-0) Selected works of Spanish literature which reflect lasting cultural values. a) Medieval and Golden Age: realism and idealism; b) Modern Spanish Thought: the individual in Spanish history and society.

*5307 Studies in Spanish American Literature. (3-0) An examination of outstanding modern works relevant to social, historical, and political development. a) Central and South America: Emphasis on Nobel Prize winners, Gabriel Mistral, Pablo Neruda, and Miguel Asturias; b) Mexican and Mexican-American: literary interrelationships.

*5308 Studies in Hispanic Culture. (3-0) Aspects of culture reflected in works of scholars, writers, artists, and the mass media. a) Spanish Peninsular: Civilization from its origins to the Present; b) Spanish-American: Historical development, social problems, art and folklore of Hispanic U.S., Mexico, Central and South America.

*5309 Advanced Conversation, Composition, and Grammar. (3-0) Topic A: Conversation; Topic B: Composition and Grammar.

*5390 Studies in Spanish Culture, Language, or Literature. (3-0) Offers students an opportunity to pursue independent studies in special areas of interest beyond those of other catalog courses. Course is generally available only to graduate students with special needs.

Prerequisite: Approval by the Chair of the department.

Application must be submitted prior to the registration period each semester.

5399 or 5699 Thesis.

5600 Internship and Foreign Study. (6-0) An independent study project of at least six weeks duration at a foreign institution, consisting of lectures, observations, and interviews relevant to the student’s major and the interests of the language teacher.

Prerequisite: Completion of all course requirements for the Master of Arts in Teaching with a major in Spanish.
Graduate Faculty

Balanoff, Howard Richard, Associate Professor of Political Science. B.A., City University of New York; M.U.P., D.E.D., Texas A&M University.

Bland, Randall Walton, Professor of Political Science. B.A., Texas A&M University; M.A., Ph.D., University of Notre Dame.

Brittain, Vicki Sue, Assistant Professor of Political Science. B.A., Southwestern College; J.D., Washburn University.

Corbett, John George, Associate Professor of Political Science. B.A., Allegheny College; Ph.D., Stanford University.

Dutton, Maurice Gene, Assistant Professor of Political Science. B.S., M.S., Kansas State University; Ph.D., The University of Texas at Austin.

Gorman, Robert Francis, Assistant Professor of Political Science. B.A., Seattle University; M.A., Ph.D., University of Oregon.

Henderson, Richard Bever, Professor of Political Science. B.A., Southwest Texas State University; M.A., Ph.D., University of Maryland.

Hindson, Theodore Thomas, Assistant Professor of Political Science and Chair of the Department of Political Science. B.A., LaSalle College, Philadelphia; M.A., Ph.D., University of Notre Dame.

Kimmitt, Gerald Joseph, Assistant Professor of Political Science. Ph.B., Loyola College; M.A., University of Texas at El Paso; Ph.D., Arizona State University.

Leder, Arnold, Associate Professor of Political Science. B.A., Brooklyn College; M.A., Washington University; Ph.D., Indiana University.

MacDonald, Robert John, Assistant Professor of Political Science. B.B.A., Southern Methodist University; Ph.D., The University of Texas at Austin.

Rice, Mitchell Forrester, Associate Professor of Political Science. B.A., M.S., California State University at Los Angeles; Ph.D., Claremont Graduate School.

Rich, Francis Marion, Jr., Professor of Political Science. J.D., Ph.D., University of Georgia.

Shields, Patricia Mary, Associate Professor of Political Science. B.S., University of Maryland; M.A., Ph.D., Ohio State University.

Stouffer, Willard Brewer, Jr., Professor of Political Science. B.A., Northwestern University; M.A., Miami University; Ph.D., Duke University.

Sullivan, Alfred Burke, Professor of Political Science. B.A., Dartmouth College; M.A., University of Rhode Island; Ph.D., University of Utah.

Weinberger, George Martin, Associate Professor of Political Science. B.A., Temple University; M.P.A., D.P.A., University of Georgia.
Degree Programs

The Department of Political Science offers a choice of three degree programs. The Master of Arts degree consists of 21-24 hours of Political Science, including the thesis, and a 6-9 hour minor. The Master of Education degree is a non-thesis program consisting of a 21 hour major in Political Science and a 15 hour minor, or a split minor of 9 and 6 hours. The degree of Master of Public Administration is a 39 hour program consisting of a core of 30 hours including an optional 3 hour internship for pre-career students and 6 hours of thesis or 3-6 hours of applied research projects (non-thesis option), and a 9-hour career support area selected from Administration of Allied Health Services, Administration of Criminal Justice Systems, General Public Administration, Government Information Systems, Human Resources Administration, International Relations, Legal and Judicial Administration, Public Finance Administration, Public Personnel Administration, and Urban Planning.

If you have at least a baccalaureate degree and desire to prepare for a career as a legal paraprofessional or lawyers' assistant, an 18 semester hour non-degree post-graduate program is offered with specializations in the areas of: Corporations; Administrative Law; Litigation; Wills, Trusts, and Estates; Real Estate and Mortgages; Family Law; and Oil and Gas Law.

With a large full-time and part-time departmental faculty, you have the opportunity for a close relationship with your professors. The University is a depository for federal and state government documents as well as a member of CORAL (Council of Research and Academic Libraries) and ICPSR (Inter-University Consortium for Political and Social Research), a data bank and computer tape exchange located at the University of Michigan.

If you are a pre-career MPA student, an internship in federal, state, or local government may be provided for you.

Courses Offered

*5301 Problems in American Foreign Relations. (3-0) Seminar based on selected topics in American foreign policy and United States involvement in international relations.

**5304 Problems in Political Theory and Methodology. (3-0) Topical seminar for the exploration of problems in political theory and/or the scope and methods of political science and public administration. Topics will vary.

*5305 Problems in Comparative Government and Politics. (3-0) The intensive study of selected areas in comparative political institutions.


5309 The Public Management Profession. (3-0) A critical survey of the theories, paradigms and practices which form the foundations of public administration in the United States. Designed for beginning graduate students who have no academic background in public administration or who have not had a strong background in public service.

**5310 Studies in Public Administration and Management. (3-0) Studies in the application of organization and management theory and practice to the several environments of public administration and management in the United States. Topics will vary.

*May be repeated once with different emphasis and professor for additional credit.

**May be repeated with departmental approval.
5311 Public Finance Administration. (3-0) Study of the formation, management and administration of fiscal policy at all levels of government in the United States, particularly budgeting as the ultimate expression of public policy.

5312 Public Sector Economics. (3-0) Advanced study of allocation, tax, and tax incidence theories; distribution policy; fiscal federalism; public debt and debt management. Evaluation of stabilization policy and its impact upon unemployment, inflation, and economic growth.

5315 Problems in Public Personnel Administration. (3-0) Analyses and evaluations of major personnel management problems in government; employee-management relations; inter-agency and inter-governmental relationship. Impact of automation. Evaluation of personnel systems.

5316 Collective Bargaining in the Public Service. (3-0) An examination of the historical development of public employee unions and the reaction of public employers. The legal position of public laws concerning collective bargaining arguments as well as an analysis of organizing procedures and strategy on the part of public managers will be covered. The effect of collective bargaining agreements on personnel policy development.

5317 Management Practices in Public Personnel Administration. (3-0) Examines recent developments in Public Personnel Administration. Special attention will be paid to the use of the Personnel Office as a center for job assignment, employee development, organizational development, and affirmative action. In addition, students will become familiar with specific personnel practices including the development of pay plans, job classifications, and employee manuals.

5320 A,B,C. Problems in Intergovernmental Relations. (3-0) A: Federal. In-depth study of the changing patterns of intergovernmental relations in the federal system. B: State and Local. In-depth analysis of the relationships between state governments and their constituent governments to include inter-state relations, intrastate relations, county problems, and local affairs. C: Municipal. In-depth analysis of political and administrative problems in the areas of urban affairs and metropolitan politics.

5324 Problems in Texas Government and Politics. (3-0) An examination of current issues and problems in the politics and governmental operations of the State of Texas.

***5330 Problems in Public Law. (3-0) Problems in the areas of administrative law, constitutional interpretations, court cases, judicial processes, and general matters of law.

5333 Ecology and the Politics of Scarcity. (3-0) An examination of major issues, theoretical, involved in the crisis areas of declining energy resources, arable land, water and food, amidst increasing population and pollution of the environment.

*5340 Problems in American Public Policy. (3-0) Problems arising in the areas of political decision-making, executive-legislative relationships, functions of government, and regulatory activities of the government.

5342A Seminar in the Policy Process. (3-0) Critical examination of the policy-making process in the American political system, with emphasis on analytical applications in the administrative and management environment.

5342B Seminar in Program Evaluation. (3-0) An advanced course in the application of quantitative methods to the evaluation of public policies and programs, with emphasis on the administrative and management environment.

*5350 Problems in American Politics. (3-0) Problems arising with respect to parties, legislation, the presidency, and political behavior.

*5360 Problems in International Politics. (3-0) A course dealing with selected topics in the field of international politics.

*5361 Problems in International Law and Organization. (3-0) A course dealing with selected topics in international law and/or international organization.

*May be repeated once with different emphasis and professor for additional credit.

***May be repeated once with different emphasis for additional credit.
**5370 Internship in Government.** (3-0) Practical experience in the on-going work of a selected governmental unit. The student will be assigned to a unit of state, federal, regional, or local government. A research paper dealing with the internship experience and written under the direction of a faculty member will be a course requirement. Evaluation will be based upon the research paper and work performance.

**5380 Economic and Social Problems of International Relations.** (3-0) Deals with selected topics in the economic and social fields of international relations.

**5382 Problems in World Political Geography.** (3-0) A course dealing with selected topics in geopolitics and world political geography.

**5397 Applied Research Project.** (3-0) Problem-oriented applied research project to fulfill non-thesis option in Master of Public Administration degree. Student will prepare a prospectus to include a statement of problem, research design, specification of data, questions to be answered concerning problem, and a representative bibliography, and submit it to the supervising instructor prior to registration for course.

**5398 Directed Reading and Research.** (3-0) Advanced reading and/or research on various topics in Political Science under the direction of a graduate faculty member.

5399 or 5699 Thesis.

**Lawyer’s Assistant Program**

Students in the Lawyer’s Assistant Program will be enrolled in 6000 level courses for non-graduate-degree credit. A degree-seeking graduate student not enrolled in this Program, but whose graduate adviser has requested inclusion of a Lawyer’s Assistant Program course or courses in the student’s outline of study, will be enrolled in 5000 level courses effective fall, 1979. Courses taken at either the 5000 or 6000 level prior to the 1979-1980 academic year may not be used later for degree program credit. No more than 9 semester hours of eligible 5000 level courses in the Lawyer’s Assistant Program curriculum may be applied toward the Master of Arts or Master of Education degrees.

**5190-6190 Introduction to Law.** (1-0) A study of statutory and case law to familiarize the student with the nature, meaning and sources of the law in Texas; the organization of the Texas legal system; law as a business, including the economics of litigation, time costs and billing systems; legal trends; employee relationships; law office problems; and professional ethics.

**5291-6291 Legal Research.** (2-0) A study of the American and Texas legal system including the courts and legislature; primary and secondary sources of the law including finding tools; judicial reports including court, federal and state reports and citation forms; case finding including federal, state, and supreme court digests and encyclopedias; citators, such as Shepard Citations and digests; annotated law reports; legal periodicals, including periodical indexes and research procedure; the nature, function, and characteristics of treatises; research procedures; state and federal administrative law; federal, state, and local court rules; English legal research of Great Britain and Canada; research aids.

**5387-6387 Practicum/Internship.** (0-9) Emphasis relates directly to a specialty course selected by the student. Extensive research is assigned for preparation of a paper. The student serves a voluntary internship requiring 2 to 3 hours two afternoons a week in a law-related office.

**5390-6390 Administrative Law.** (3-3) Course deals with the origin, development and theory of Administrative Law and the agencies and tribunals established to administer the law. Emphasis is on enforcement, quasi-legislative and quasi-judicial powers of federal administrative agencies and state tribunals.

**5391-6391 Family Law.** (3-0) Emphasis is on Texas law, dealing with pre-marital contracts, marriage relationships, annulment, abortion, adoption, juveniles, Family Code, divorce, support for children, custody, separation agreements, etc.

*May be repeated once with different emphasis and professor for additional credit.

* * *May be repeated once with different emphasis for additional credit.
5392-6392 Corporations. (3-0) A study of the federal and Texas law relative to corporations with particular emphasis on the preparation of initial and amended articles of incorporation, satisfaction of state filing requirements, preparation of drafts of stock certificates and securities, the maintaining of stock ledgers and books, the preparation of draft resolutions authorizing cash and stock dividends and stock splits, the drafting of employment agreements, and other activities necessary to the maintenance, merger, and closing of corporations.

5393-6393 Estates and Trusts. (3-0) Study of Texas law regarding estates and trusts with emphasis on preparation of documents relating to the administration of estates.

5394-6394 Litigation. (3-0) Study of statutory and case law relative to civil and criminal procedure in order to develop an understanding of the preparation of litigation.

*5395-6395 Real Estate. (3-0) Study of Texas laws concerning real property, conveyances, recordation, taxation, and sales regarding real property. Student will become familiar with various records maintained dealing with real property by public officials and will develop an understanding of the procedures by which titles are searched.

5396-6396 Law Office Management. (3-0) Course will cover management concepts, with emphasis on timekeeping, minimum fee schedules, billing, library and retrieval systems, ethics, and other management practices applicable to utilization of Legal Paraprofessionals in law-related positions.

Department of Psychology

Graduate Faculty

Archer, Richard Lloyd, Associate Professor of Psychology. B.A., University of Kansas; Ph.D., Duke University.

Cooper, Robert George, Jr., Assistant Professor of Psychology. B.A., Pomona College; Ph.D., University of Minnesota.

Davis, John Michael, Professor of Psychology. B.A., M.A.T., Oklahoma City University; M.S., Ph.D., University of Oklahoma.

Durrett, Herman John, Jr., Associate Professor of Psychology. B.S., University of Houston; Ph.D., University of Colorado.

Fling, Sheila, Associate Professor of Psychology. B.A., M.S., Baylor University; Ph.D., The University of Texas at Austin.

Ginsburg, Harvey Joe, Professor of Psychology. B.S., Ph.D., University of Houston.

Merryman, Sandra Stroud, Associate Professor of Psychology. B.A., George Peabody College for Teachers; Ph.D., Indiana University.

Oles, Henry John, Professor of Psychology. B.A., Youngstown State University; M.A., Ph.D., University of Pittsburgh.

Rosenwasser, Shirley Miller, Associate Professor of Psychology. B.A., McPherson College; M.A., Ph.D., University of Michigan.

Sitton, Sarah Clydette, Assistant Professor of Psychology. B.A., M.A., Ph.D., The University of Texas at Austin.

Snodgrass, Gregory, Assistant Professor of Psychology and Counselor in the Counseling and Testing Center. B.A., M.S., University of Alaska; Ph.D., University of California, Los Angeles.

*May be repeated once with different emphasis and professor for additional credit.
Stimmel, David Theron, Professor of Psychology. B.A., M.A., Southern Methodist University; Ph.D., University of Michigan.

Wheeler, Richard Wade, Professor of Psychology and Chair of the Department of Psychology. B.S., M.A., Ph.D., University of Houston.

Wright, Loyd Stanley, Professor of Psychology. B.S., University of Houston; M.A., The University of Texas at Austin; Ed.D., University of Illinois.

Degree Programs

The Department of Psychology does not presently offer a major. A large number of graduate programs include a Psychology minor or a split minor of Psychology and Sociology. Courses in Psychology are also often used in the graduate Interdisciplinary Studies programs.

Courses Offered

5315 Mental Hygiene. (3-0) An examination of the dimensions of mental health with emphasis on self-awareness and personal growth. Includes a review of social and familial factors which influence self-esteem, personal adjustment, and achievement.

5317 Group Processes and Interpersonal Dynamics. (3-0) Designed to train future professionals in both the cognitive and personal issues related to group behavior.

5319 Techniques and Dynamics of Interviewing. (3-0) The principles and techniques of interviewing. Emphasis will be placed upon skills relative to the professional career aspirations of the student.

5320 Advanced Statistics. (3-0) A review of probability theory and parametric and non-parametric statistical techniques. Emphasis on the use of these techniques to interpret behavioral research studies.

Prerequisite: A course in undergraduate statistics.

5322 Measurement Principles in School Psychology. (3-0) Basic measurement theory including test reliability, validity, and the construction and interpretation of norms. Includes a study of test construction practices and item selection techniques to enable the student to serve as a measurement consultant to the faculty of his/her school.

5330 Psychology of Language. (3-0) Development of language in children, with emphasis on language perception and production and the task of learning verbal behavior.

5331 The Emotional Problems of Childhood. (3-0) An examination of the characteristics of children with emotional and behavioral disorders. Includes suggestions for the alleviation of maladaptive behavior in the school setting.

5332 The Appraisal and Modification of Emotional Disturbances in Children. (3-0) A review of selected models of human behavior. Emphasis on understanding and modifying maladaptive behavior in school age youngsters.

*5360 Selected Topics in Psychology. (3-0) An in-depth study of a set of selected topics of great current interest in psychology. The work is done on an individual basis with a faculty member. This course is available only upon invitation of the department.

5370 Psychology of Learning. (3-0) Basic problems in the acquisition of responses, treating with such constructs as reinforcement, extinction, retention, forgetting, problem solving, motivation, and punishment. Major theories are treated through attention to classical experiments, but greatest emphasis is given contemporary research. See Education 5370.

*May be repeated once for credit if topic differs.
5371 Learning Theory Applied to Behavior Modification. (3-0) Presents procedures for behavior modification developed from learning theory. Behavioral intervention and management techniques applicable to groups and individuals are covered, with special emphasis given to school psychology. Procedures reviewed include contingency management routines, behavioral contracting, time-out methods, and aversive therapy plans.

Prerequisite: Psychology 5370 or equivalent.

5376 Psychological Assessment I. (3-0) Standard individual tests (i.e., WISC, WAIS, BINET) of general intelligence and special abilities and achievement, their theoretical and statistical bases; construction, administration, scoring, and interpretation of these instruments. See Education 5376.

Prerequisite: Advanced education, psychology, anthropology, or sociology, including child development or child psychology, and consent of the instructor.

5377 Psychological Assessment II. (3-0) Advanced investigation in personality dynamics and role expectation; projective instruments (i.e., Rorschach Thematic Apperception Test, etc.) and their theoretical bases; construction, administration, scoring, and interpretation, synthesis with interview, self report, psychometric, and sociometric data. See Education 5377.

Prerequisite: Psychology/Education 5376, or its equivalent, graduate standing, and consent of the instructor.

5385 Industrial Social Psychology. (3-0) Research findings and theoretical concepts concerned with social-structured problems in organizations. Topics covered include: The system concept, characteristics of social organization, organizational effectiveness, leadership communications, and decision making.

5387 Behavioral Statistics With Computer Applications. (3-0) An extension of Psychology 5320 with emphasis on the analysis of variance, multiple correlation, and an introduction to multivariate analysis. Students will learn to use the facilities of the computer center for data analysis.

Prerequisite: Psychology 3387/5320.

The following are offered also as courses in Education. See the listings in the Department of Education section for the respective course descriptions:

5313 Human Growth and Development I. (3-0)
5314 Human Growth and Development II. (3-0)
5354 Counseling Techniques. (3-0)
5357 Individual Testing. (3-2)

The following course is offered also in the Department of Special Education. See the listing in the Department of Special Education section for the description.

5364 Psychological Problems of the Mentally Retarded. (3-0)

Department of Sociology

Graduate Faculty

Bardo, John William, Professor of Sociology and Dean of the School of Liberal Arts. B.A., University of Cincinnati; M.A., Ohio University; Ph.D., Ohio State University.

Corrie, Walter Samuel, Jr., Professor of Sociology. B.A., M.A., Baylor University; Ph.D., State University of Iowa.
Day, Susan Hilbert, Assistant Professor of Sociology. B.A., M.A., University of Oklahoma; M.Phil., Ph.D., University of Kansas.

Ford, Ramona Louise, Assistant Professor of Sociology. A.B., Baker University; M.A., Indiana University; M.A., New School for Social Research; Ph.D., Southern Illinois University.

Jorgenson, David Einar, Associate Professor of Sociology. B.S., Texas Lutheran College; M.A., Texas Christian University; Ph.D., North Texas State University.

Matlock, Donald Thomas, Associate Professor of Sociology. B.S., M.S., North Texas State University; Ph.D., The University of Texas at Austin.

Newsom, Rollo Kern, Associate Professor of Sociology. B.S., The University of Texas at Austin; M.S., North Texas State University; Ph.D., The University of Texas at Austin.

O'Connell, John Joseph, Associate Professor of Sociology. A.B., M.A., S.T.B., St. Louis University; Ph.D., Loyola University, Chicago.

Schultz, Clarence Carven, Professor of Sociology. B.A., M.A., Southwest Texas State University; Ph.D., The University of Texas at Austin.

Short, Alvin Phillip, Associate Professor of Sociology. B.S., Southwest Missouri State College; M.A., Ph.D., Emory University.

Watts, Wilford David, Jr., Associate Professor of Sociology and Chair of the Department of Sociology-Anthropology. B.A., The University of Texas at Austin; M.A., Ph.D., State University of New York at Buffalo.

Degree Programs

The Department of Sociology-Anthropology offers two graduate degree programs: The Master of Arts in Teaching and the Master of Arts in Interdisciplinary Studies.

**M.A.T. Degree.** The Master of Arts in Teaching has two basic goals. The first goal is to enhance the competencies of persons who will teach in community colleges or public schools. The second goal is to provide a sound general background for those who anticipate further graduate training beyond the master's. The program is open to those who wish to extend their undergraduate training in sociology and to those who want to acquire sociology as a first or second teaching field. Individuals without secondary certification in sociology may combine the graduate program with selected required undergraduate courses to obtain certification in sociology. Or you may combine graduate instruction in sociology with supporting work in Junior College Education to achieve competencies for junior college teaching. If you do not have undergraduate sociology training in principles (introduction), theory, statistics, and research you must complete undergraduate courses in each of these areas. Dependent on the extent of your undergraduate training in sociology or related fields, you may be permitted to take up to 6 hours of selected graduate courses before completing these undergraduate requirements.

The basic degree requirements are 37 semester hours. You must take the following:

- Sociology 5100 Sociology 5380
- Sociology 5308 Sociology 5399 or Sociology 5699
- Sociology 5310 (consult thesis regulations)

You may choose either the essay option or the thesis option for 3 to 6 hours credit, respectively. The degree may be obtained by completing:

1. Twenty-two hours in sociology and 9 hours in a first and 6 hours in a second minor. The minors may be selected from teaching areas for which the individual is already certified at the secondary level, or may be divided between a second teaching field and a substantive area of Education.
2. Twenty-five hours in sociology and 12 hours in a minor either in a second teaching field or a substantive area of Education such as Junior College Education.

3. Twenty-eight hours in sociology and 9 hours of supporting work in a second teaching field or in an area of specialization in Education, such as Junior College Education, or in a major field, such as Counseling and Guidance.

Sociology may be included as a minor field or supporting area for graduate studies in various master's programs. Sociology is a required resource area for students in graduate programs in Educational Administration and Reading Education. Sociology students who are not involved in public school teaching may select from a variety of minors approved by the Graduate School. The selection process should be accomplished in consultation with the departmental graduate adviser.

**M.A.I.S. Degree.** The Master of Arts in Interdisciplinary Studies in Applied Sociology is designed to provide various non-traditional options for the student whose needs cannot be met by traditional programs of study. These programs link the methods and theories of the research field of sociology to practical areas of social analysis. The student is educated in both quantitative and qualitative methods, problem solving techniques, and communication skills.

The interdisciplinary nature of the program assures that the student is able to perform in applied settings. For students with limited practical experience, internship opportunities will be arranged. Students may choose from four major program areas.

**Industry and Work:** A program that is designed to familiarize the student with the administration of various types of organizations, with the dynamics of group interaction processes, and with effective organizational communication skills. In addition to focusing on the operation of the organization itself, the program is designed to acquaint the student with the place of organizations within the wider community and society.

**Social Control:** A program designed to increase the professional skills of persons who will be involved in various aspects of the criminal justice system. Since persons who work within the criminal justice system will be involved in a wide variety of job settings and specializations, the program has been developed with three separate sub-tracks. These are:

A. **Counseling:** This program emphasizes the skill necessary for counseling in the bureaucratic setting. Students will find that this degree plan provides opportunities for developing or polishing counseling techniques and applying them in an agency setting.

B. **Criminal Justice Administration:** This program emphasizes the acquisition of knowledge about the criminal justice system and the application of that knowledge in an agency setting.

C. **Research in Criminology:** Research skills and their application to the study of deviant behavior are the foci of this program. Students will learn how to conduct research and investigate issues of societal concern.

**Social Studies:** A program designed to further the educational preparation of secondary social science teachers in the public schools. Teachers who have responsibilities for teaching in several social areas will find that the degree plan allows for a combination of several related social science disciplines—sociology, economics, geography, history, and political science.

**Studies in Gerentology:** A program emphasizing the responses of various groups in society to the process of aging. In addition to the sociological focus on aging, research applications and the development of practical skills will be emphasized.

Students interested in any of the Interdisciplinary programs should contact the graduate adviser, Department of Sociology-Anthropology, for proper counseling and assignment to an appropriate adviser.

**Financial Aids Program.** The Department of Sociology-Anthropology provides financial aid by employing graduate students as student assistants and research assistants. In addition, the department employs certain qualified Master of Arts in Teaching students as Assistant Instructors when positions are available.
Courses Offered

5100  Pro-Seminar in Sociology. (1-0) An examination of contemporary issues in sociology as a discipline. Required for all beginning M.A.T. students in the first long semester of enrollment. Students will take the "Diagnostic Oral Examination" and complete any requirements assessed by the "Diagnostic Oral Committee" before a grade will be assigned in this course.

5308  Seminar in Research Methods. (3-0) The application of research methods to social science with emphasis on direct, practical experience in research.

5310  Teaching Sociology. (3-0) Objectives, methods, and materials of instruction in the sociology curriculum. Relation of sociology to other disciplines.

5311  Selected Problems in Sociology Instruction. (3-0) Seminar or individual study projects concerned with selected problems in the teaching of sociology.

5316  Seminar in Deviation and Social Problems. (3-0) A systematic analysis of contemporary social problems and various types of social deviation. Emphasis is upon the socialization process as it relates to social problems and human deviation. The sociological explanation of underlying factors will be stressed.

5319  Seminar in Social Psychology. (3-0) A critical appraisal of the major theories and theorists found in Social Psychology with emphasis on their application to contemporary social and psychological issues.

5320  Seminar in Demography. (3-0) A seminar in the study of population with emphasis on sources of demographic data, techniques of demographic analysis, and population composition and forecasts.

5337  Seminar in the Family. (3-0) An analysis of selected topics with respect to contemporary family structure and processes.

5343  Seminar in Criminology. (3-0) An analysis of theories and research related to the crime problem with particular emphasis upon the United States. Emphasis will include a study of the role of punishment, corrections, and the reform of offenders. Special consideration will be given to influential social conditions which play a part in crime causation and prevention.

5353  Seminar in the Community. (3-0) A study of contemporary urban society with emphasis on understanding the social structure as a prerequisite to planning and problem solving at the community level.

5360  Seminar in Social Change. (3-0) An intensive examination of social change in selected problematic areas of current social concern, relating these changes to broader theories of social change, and giving attention to major research studies in these areas.

5363  Seminar in Medical Sociology. (3-0) A seminar on selected topics of human health and health care organizations. Topics to be stressed include: social causes and consequences of morbidity and mortality, professionalization and socialization of health care practitioners, organization of health institutions, and demographic changes in health problems and needs.

5370  Seminar in Multi-Cultural Relations. (3-0) Examines the dynamics of dominant-subordinate social groups. Focuses on racial, ethnic, and class differences.

5373  Workshop in Sociology. (3-0) Selected topics in sociology for intensive examination utilizing a variety of sociological resources and methods. Note: (5373) General Workshop, (5373A) Theory and Methods, (5373B) Social Gerontology, (5373C) Death and Dying.

5380  Sociological Essay. (3-0) Directed study of a specific sociological topic requiring the student to apply skills and knowledge gained in course work.

5399 or 5699  Thesis.

*May be repeated once with different emphasis for additional credit.
School of Science

Department of Biology

Graduate Faculty

**Alexander, Mary Louise**, Professor of Biology. B.A., M.A., Ph.D., The University of Texas at Austin. (Genetics-mutagenesis)

**Aron, Gary Michael**, Associate Professor of Biology. B.S., M.S., St. John's University; Ph.D., The Pennsylvania State University. (Microbiology, Virology)

**Baccus, John Thomas**, Associate Professor of Biology. B.S., M.A., Midwestern University; Ph.D., North Texas State University. (Wildlife, Community Ecology)

**Benjamin, Caroline Pitcher**, Assistant Professor of Biology. B.A., Harpur College; M.A., Ph.D., Indiana University. (Embryology, Developmental Biology)

**Edwards, Sidney William**, Professor of Biology. B.S., M.A., George Peabody College for Teachers; Ph.D., Vanderbilt University. (Vertebrate Anatomy)

**Emery, William Henry Perry**, Professor of Biology. B.S., Rhode Island State College; M.S., University of Connecticut; Ph.D., The University of Texas at Austin. (Cytotaxonomy)

**Fonteyn, Paul John**, Associate Professor of Biology. B.S., University of San Francisco; M.A., Ph.D., University of California at Santa Barbara. (Plant Ecology)

**Hannan, Herbert Herrick**, Professor of Biology and Chair of the Department of Biology. B.S. in Ed., M.A., Southwest Texas State University; M.A.T., Brown University; Ph.D., Oklahoma State University. (Limnology)

**Horne, Francis Ray**, Professor of Biology. B.S., Texas Tech University; M.S., Ph.D., The University of Wyoming. (Invertebrate Physiology, Biochemistry)

**Huffman, David George**, Professor of Biology. A.B., West Virginia University; M.S., Marshall University; Ph.D., University of New Hampshire. (Fish Parasitology)

**Koehn, Robert Dean**, Associate Professor of Biology. B.S., Bethel College; M.S., Kansas State Teachers College; Ph.D., The University of Texas at Austin. (Mycology, Phycol­ogy)

**Koke, Joseph Ralph**, Associate Professor of Biology. B.S., M.S., University of Oregon; Ph.D., University of Alberta. (Cell Biology, Physiology)

**Lewis, Melanie Carol**, Associate Professor of Biology and Supervisor of Student Teaching. B.S., Newcomb College of Tulane University; M.S., University of Houston; Ph.D., The University of Texas at Austin. (Earth Science, Science Education)

**Longley, Glenn**, Professor of Biology. B.S., Southwest Texas State University; M.S., Ph.D., University of Utah. (Limnology, Pollution Biology)

**Meyer, George Herbert**, Associate Professor of Biology. B.S., Baylor University; M.A., The University of Texas at Austin. (Microbial Physiology)

**Schneider, Edward Lee**, Associate Professor of Biology. B.S., M.S., Central Washington State College; Ph.D., University of California at Santa Barbara. (Plant Anatomy, Morphology)

**Short, Robert Allen**, Assistant Professor of Biology. B.A., University of California, Santa Barbara; M.A., California State University; Ph.D., Colorado State University. (Aquatic Ecology)
Sissom, Stanley Lewis, Professor of Biology. B.S., M.S., North Texas State University; Ph.D., Texas A & M University. (Invertebrate Zoology, Ecology)

Tomasso, Joseph Richard, Jr., Assistant Professor of Biology. B.S., University of Tennessee; M.S., Middle Tennessee State University; Ph.D., Memphis State University. (Toxicology, Aquatic Physiology)

Tuff, Donald Wray, Professor of Biology. B.A., San Jose State University; M.S., Washington State University; Ph.D., Texas A & M University. (Entomology, Parasitology)

Whitenberg, David Calvin, Professor of Biology. B.S., M.S., Ph.D., Texas A & M University. (Plant Physiology, Biochemistry)

Whiteside, Bobby Gene, Professor of Biology. A.S., Eastern Oklahoma A & M College; B.S., M.A., Ph.D., Oklahoma State University. (Ichthyology, Fisheries Management)

Young, Willard Cooper, Professor of Biology and Dean of the School of Science. B.S., M.A., The University of Texas at Austin; Ph.D., University of Colorado. (Freshwater Ecology)

Degree Programs

Graduate students in Biology may elect one of four degree options: the Master of Science with or without a thesis, the Master of Arts, and the Master of Education.

The Master of Science and Master of Arts degrees, each including a thesis, require at least 24 hours of coursework. The major and minor will consist of 15-18 hours and 9-6 hours respectively. In addition to the 24 hours a minimum of 6 hours of thesis (5399, 5699), three hours of fundamentals of research (5395), and three one-hour seminars (5110) may be required. The Master of Arts degree may include a minor from the sciences, while the Master of Science degree requires that the minor must be from the sciences. The Master of Education degree generally requires the minor to be taken outside the sciences. The 36 hours non-thesis Master of Science degree is available only to those individuals having a minimum of two years of teaching experience and who intend to continue teaching as a career.

Students working toward the Master of Education degree do not take Fundamentals of Research (5395) nor thesis (5399, 5699). The requirement of three one-hour seminars does apply. The major and minor will consist of a minimum of 21 hours and 15 hours respectively. A split minor of 9 hours (first minor) and 6 hours (second minor) is also available, though rarely taken by a Biology major.

The Biology major selecting a minor in science has the following options: aquatic biology, biochemistry, mathematics, chemistry, or physics.

Thesis problems are available in any area of special competence represented by Biology department faculty members. In general, the following areas are available: anatomy (plant and vertebrate), aquatic biology, cytology, developmental biology, ecology, genetics, invertebrate zoology, microbiology, virology, mycology, parasitology (animal), phycology, physiology and biochemistry, science education, taxonomy (plant and animal), and wildlife management.

Financial Aids Program. Financial assistance through the Biology department is available in the form of graduate laboratory instructorships. Support is limited to two years. Applications for instructorships are available from the department Chair and completed applications are due by March 15 to be considered for the following school year. A limited number of research assistantships are also available in certain areas.
Courses Offered

**5110 Seminar in Biology.** (1-0) A graduate student majoring in biology may be required to take a minimum of three semester hours in this course in addition to the standard requirements for the advanced degree. (F,S)

5110L Limnology. (3-0) Selected topics in limnology.

5301 Evolution. (3-2) Basic genetic principles applied to natural selection, adaptation, populations, speciation, and man’s future. Consideration is given to the origin of life, nature of chromosomal variation, evolution of genetic systems, and certain other selected topics. Laboratory is by special arrangement. (S,SS)
Prerequisite: Biology 3450 or its equivalent.

5305 Nature Study. (3-3) Designed for elementary teachers who intend to use natural materials in the teaching of elementary science. Includes the study of birds, insects, trees, flowers, elementary astronomy, and environmental resources. May not be credited toward a biology major or minor or secondary teaching field. (S,SS)

5310 Field Biology of Plants. (2-3) Ecological relationships and natural history of plants, including historical geology, geography, soils, vegetational regions, and surface geology of central Texas. Emphasis is placed on plant-soil-water relationships to develop conservation concepts. Students will make a representative collection of plants. (F,SS)

5312 Radiation Biology. (2-3) Ionizing radiations and their effects on biological systems. Use of radioactive materials in experimental biology will be introduced. (F)

*5318 Topics in Botany.** (3-2) Selected topics in plant anatomy, cytology, ecology, morphology, mycology, phycology, physiology, and taxonomy.

*5319 Topics in Ecology.** (3-3) Significant concepts of ecology are studied in depth and applied to areas that are poorly understood.

5320 Field Biology of Animals. (2-3) Environmental relationships and natural history of invertebrates and vertebrates. Emphasis is upon taxonomy, speciation, and biotic provinces. The laboratory will include field trips for the study and collection of animals in their natural habitats. Students will assemble a representative collection of animals. (S,SS)

5321 Ornithology. (3-3) Introduction to anatomy, behavior, ecology, and identification of the birds of Texas. Laboratory will emphasize field studies of birds and their habitat requirements. (S)

5322 Mammalogy. (3-3) The taxonomy, distribution, ecology, behavior, and evolution of mammals with particular emphasis on wild mammals of the Southwest. Laboratory will emphasize anatomy, identification, preparation of specimens, and field exercises in the methods of population analysis. (S,SS)

5323 Wildlife Management. (3-3) Applications of the principles of ecology and natural history to the management of wildlife habitats and control of wildlife populations. Laboratory will involve demonstrations and practice exercises with wildlife management techniques and instrumentation and field trips to observe wildlife management projects. (F)

5330 Experimental Techniques. (2-3) Use of methods and instruments applicable to biological investigations, including colorimetry; UV-spectrophotometry; fluorescence; flame and atomic absorption spectrophotometry; paper, gas, gel filtration and ion exchange chromatography; radioactive counting; and electrophoresis. (F)

5335 Fisheries Management. (2-4) An introduction to principles and techniques in fisheries management. Includes the study of artificial reproduction, carrying capacity, productivity, sampling procedures, population estimates, mortality, survival, growth rates, and commercial and sport fisheries. (S)
Prerequisite: Biology 4315-5315, or consent of instructor.

*This course may be repeated once for credit.

**This course may be repeated for credit.
5336 Parasitology of Fishes and Other Aquatic Animals. (2-3) The natural history and quantitative ecology of protozoan and metazoan parasites of fishes and other aquatic animals. Laboratory will involve field work, development of skills in the parasitological examination of aquatic animals, and the techniques of parasite identification with emphasis on fish parasites.
Prerequisite: Biology 5325 or Biology 5315 or Biology 5313, or consent of instructor.

5340 Cell Physiology. (3-3) A molecular approach to the functions of cells. Includes principles of thermodynamics, bioenergetics, membrane functions, and molecular genetics. (S)

5345 Advanced Genetics. (3-2) Inheritance of biochemical and physiological characteristics, medical genetics, and modifications of genetic systems by radiations and chemicals. The genetic systems of various organisms are included but reference and application to the genetic system of humans are emphasized. (S)
Prerequisite: Biology 3450 and a background in physiology. Biology 4301 and biochemistry are recommended.

**5350 Topics in Physiology. (3-0) Selected topics in plant, microbial, and animal physiology.

5350D Physiological Embryology. (3-0) Selected topics dealing with physiological aspects of embryonic development.

5355 Developmental Biology. (2-3) The role that growth, differentiation, cellular interactions, movements, and metabolism play during embryogenesis, gametogenesis, regeneration, aging, and sexual reproduction and their control of nuclear and/or cytoplasmic factors. Laboratory will emphasize experimental manipulations of sea urchin, frog, and chick embryos; fern gametophytes; planaria and cellular slime molds.

**5360 Comparative Physiology. (2-3) Attention is given to the way in which different organisms perform similar functions. (F)

5361 Biology of Water Pollution. (2-3) Biological aspects of water pollution and purification will be stressed. Attention is given to the response of aquatic communities to changes in water quality. Current pollution problems, toxicity bioassays, biological techniques, and methods for monitoring pollution are considered.
Prerequisites: Biology 2360 and Biology 4370.

5362 Environmental Impact Analysis. (3-0) Current government regulations regarding environmental impact, content of environmental impact statements, how to proceed with an impact study, application of ecological principles to impact studies, and steps in the review process for environmental impact statements are considered.

5365 General Entomology. (3-3) Principles of morphology, physiology, and taxonomy of insects. Laboratory time will be devoted to a taxonomic study of the common Orders and Families of insects. (F)

5390 Problems in the Biological Sciences. Open to graduate students on an individual basis by arrangement with the faculty member concerned; problems in the areas of systematics and environmental biology, physiology and biophysics, and cytology and genetics.

5395 Fundamentals of Research. (3-0) Designed to acquaint the beginning graduate student with materials and methods of research in the biological sciences.
A graduate student majoring in biology may be required to take this course in addition to the standard requirements for the advanced degree.

5399 or 5699 Thesis.

***This course may be repeated for credit.
5411 Morphology of the Vascular Plants. (3-3) The structure, life-cycles, and evolution of fossil and living vascular plants. Emphasis on such topics as the origin of land plants, evolution of the ovule, angiospermy, the flower, and fruit. (S, even years)

5412 Plant Anatomy. (3-3) The anatomy of vascular plants stressing descriptive, developmental and comparative aspects of seed plants, and the anatomical adaptations of plants to environmental factors. (S, odd years)

5413 Parasitology. (3-4) The biology and biological significance of the common parasites of man and animals. (S)

5415 Ichthyology. (3-3) An introduction to the morphology, taxonomy, natural history, and evolution of fishes. Field trips will be made to collect specimens and laboratory periods will be devoted to morphological and systematic analyses. (F,SS)

5424 Topics in Wildlife Biology. (3-3) Concepts in wildlife biology are studied in depth with emphasis on little understood and new information.
Prerequisites: Biology 4323, Biology 4321, and Biology 4322.

5425 Biometry. (3-3) Basic principles of statistical methods as applied to biological problems such as sampling techniques, analysis of data, experimental design, and population dynamics. Emphasis will be on practical application. Three-hour laboratory will provide supervised solution of statistical problems using hardware and software tools of the trade as well as supervised experience with statistical simulations on color graphics microcomputers. (F, S, SS)
Prerequisite: One year of mathematics.

5440 Pathogenic Fungi. (2-6) A general study of fungi with special emphasis on the taxonomy, sources, incidence, medical factors, and host-pathogen relationships of pathogenic fungi. (S)
Prerequisite: Biology 3440, or consent of the instructor.

5445 Pathogenic Microbiology. (2-6) Pathogenic bacteria and their relationship to disease, emphasizing identification of selected groups of pathogens, epidemiology, and the biological basis for resistance. (F, S)
Prerequisite: Biology 3440, or consent of the instructor.

5454 Plant Ecology. (3-3) Physiological ecology and community structure and function in the organization of terrestrial plant ecosystems. Quantitative vegetational sampling and the use of field and laboratory physiology equipment are included in the laboratory.

5463 Toxicology. (3-3) The adverse effects of chemicals on living organisms, populations, and ecosystems.

5470 Limnology. (3-3) The physical, chemical and biological factors affecting productivity in lakes, ponds, and streams. Limnological sampling methods, chemical and biological analysis of samples, and hydrographic surveying are included in the laboratory. (F)
Prerequisite: One year of chemistry, or consent of the instructor.

5480 Cytology and Microtechnique. (3-3) The structure of prokaryotic and eukaryotic plant and animal cells as revealed by the electron microscope. Includes the structure and function of cytoplasmic organelles, the nucleus, and an introduction to cytogenetics. The laboratory includes instruction in the cryostat, electron microscopy, and classical paraffin techniques for the light microscope. (F, SS)
Department of Chemistry

Graduate Faculty

Banks, Alton Joseph, Assistant Professor of Chemistry. B.A., West Georgia College; Ph.D., Vanderbilt University. (Inorganic chemistry: coordination compounds, heavy metal toxicology, chemical education, computers in chemistry)

Cassidy, Patrick Edward, Professor of Chemistry. B.S., University of Illinois; M.S., Ph.D., University of Iowa. (Organic chemistry: polymer synthesis, backbone reactions, property-structure relationships, high-temperature polymers)

Compton, Ross Davis, Associate Professor of Chemistry. B.S., M.S., North Texas State University; Ph.D., The University of Texas at Austin. (Inorganic chemistry: determination of structure and bonding in organometallic and inorganic compounds)

Cude, Willis Augustus, Jr., Associate Professor of Chemistry. B.S., The University of Texas at Austin; M.S., Ohio State University; Ph.D., The University of Texas at Austin. (Inorganic chemistry: transition metal compound, mu-bridged dimers, crystallography)

Fitch, John William, III, Professor of Chemistry. B.S., Ph.D., The University of Texas at Austin. (Inorganic chemistry: vinylmetallics, quasi-aromatic organometallics and carbenoids)

Irvin, James Duard, Professor of Chemistry. B.S., Gonzaga University; Ph.D., Montana State University. (Biochemistry: protein metabolism, enzymology)

Lippmann, David Zangwill, Associate Professor of Chemistry. B.S., M.A., The University of Texas at Austin; Ph.D., University of California at Berkeley. (Physical chemistry: thermodynamics, kinetics)

Perry, Reeves Baldwin, Professor of Chemistry. B.S., East Texas State University; M.S., North Texas State; Ph.D., The University of Texas at Austin. (Physical chemistry: surface chemistry-absorption kinetics of surfactants on mineral surfaces; interfacial tension of hydrocarbon-aqueous surfactant solutions)

Rudzinski, Walter Eugene, Associate Professor of Chemistry. B.S., University of Detroit; Ph.D., University of Arizona. (Analytical chemistry: chromatography, electrochemistry, measurement of thermodynamic parameters of ion pairs and metal chelates)

Willms, Charles Ronald, Professor of Chemistry. B.A., The University of Texas at Austin; M.A., Southwest Texas State University; Ph.D., Texas A & M University. (Biochemistry: amino acid and protein chemistry)

Yager, Billy Joe, Professor of Chemistry and Chair of the Department of Chemistry. B.S., Southwest Texas State University; M.S., Ph.D., Texas A & M University. (Physical organic chemistry: solvent effects on organic reactions)

Degree Programs

The department offers a program of lectures, laboratories, and research leading to the Master of Science, the Master of Arts, and the Master of Education degrees. These programs are designed to train professional chemists, enhance the training of chemistry teachers, and provide adequate background for further advanced study.

The Master of Science degree (30 hours) requires a major of 21-24 hours (includes 6 hour thesis) and a minor of 9-6 hours from within the School of Science. A 36 hour non-thesis degree is available at the discretion of the department. Generally, an undergraduate major in chemistry is required for admission into this program.

The Master of Arts degree has the same hour requirement as the Master of Science degree with thesis, but the minor may be outside the School of Science. A concentration in
Biochemistry is open to those with an undergraduate minor in chemistry and a major in biology. The Master of Education degree requires 36 hours but no thesis.

**Research Areas.** The graduate faculty conducts research in numerous areas of the five basic fields of chemistry. Specific research areas include:
- Analytical—atomic absorption, chromatography, electrochemistry, spectral methods;
- Biochemistry—enzyme isolation, enzyme mechanisms, protein and amino acid chemistry;
- Inorganic—Synthesis and structure of organometallic compounds, boron-nitrogen compounds, coordination chemistry, bioinorganic chemistry;
- Organic—Polymer synthesis and characterization, physical organic studies, synthesis; and
- Physical—Solution properties, X-ray crystallography, surface chemistry.

**Research Facilities.** The department occupies the fourth floor of the Science Building. Research instruments available include NMR, UV, IR, X-ray, atomic absorption, liquid and gas chromatographs, mass spectrometer, osmometers, high-speed centrifuges, magnetic susceptibility apparatus, DEC-10 computer.

**Financial Aids Program.** Graduate students are encouraged to work as laboratory teaching assistants. A limited number of research assistantships are also available at pay similar to that of laboratory teaching assistants.

**Courses Offered**

*5110 Seminar in Chemistry. (1-0) A graduate student majoring in chemistry is required to absolve a minimum of two semester hours in this course in addition to the standard requirements for the advanced degree.*

**5189 Postgraduate Research. (0-3) Course is designed for students with one or more degrees in chemistry who desire further experience in the chemistry laboratory. A program of work involving synthesis and/or analysis will be outlined and supervised by a member of the faculty.*

5275 Laboratory Techniques in Biochemistry. (1-6) Experiments illustrating principles and methods of biochemistry are performed. Emphasis is placed on the use of instrumentation employed in research on animal, microbial, and plant tissues.

Prerequisites: Chemistry 3410, Chemistry 4375 or Chemistry 4385. Corequisite: Chemistry 4375 or Chemistry 4385 or Chemistry 5375 or Chemistry 5385.

5325 Selected Topics in Physical Chemistry. (3-0) The topics offered periodically are: (A) Thermodynamics and Kinetics. The concepts of classical thermodynamics are discussed and their applications to chemistry are illustrated. Theoretical concepts and experimental methods of chemical kinetics are presented. (B) Nuclear and Radiochemistry. Topics discussed include nuclear structure, radioactivity, induced nuclear reactions, detection and measurement of nuclear radiation, and interaction of nuclear radiation with matter. (C) Advanced Physical Chemistry. The application of quantum mechanics to vibrational, rotational, and electronic spectroscopy is discussed.

Prerequisite: Chemistry 3340.

5336 Methods and Techniques of Physical Sciences. (2-4) Course includes methods of instruction and laboratory techniques of topics recommended by the Texas Education Agency to be included in a physical science course in public schools. See Physics 4336-5336.

5337 Methods and Techniques of Physical Science. (2-4) Course includes methods of instruction and laboratory techniques of topics recommended by the Texas Education Agency to be included in a physical science course in public schools. See Physics 4337-5337.

5345 Chemical Bonding and Structure. (3-0) A study of modern theories of chemical bonding in both organic and inorganic systems. Topics include both valence bond and

*May be repeated once for additional credit.

**May be repeated as needed.
molecular orbital approaches. Huckel molecular orbital theory and ligand field theory are included.

Prerequisite: Chemistry 3340.

**5350 Selected Topics in Organic Chemistry.** (3-0) The topics offered periodically are: (A) Organic Mechanisms and Reactions. Organic reactions are discussed by mechanism classification with emphasis on structure-reactivity relationships and solvent effects on reactions. (B) Polymer Chemistry. Discusses polymer terminology, synthesis, and characterization.

Prerequisites: Chemistry 2420 and Chemistry 3440.

**5352 Chemical Engineering.** (3-0) Course compares roles of the chemical engineer and chemist, contrasts engineering units and metric units, and covers dimensional analysis steady state material balance and principles of energy conservation. (F)

Prerequisites: Chemistry 3340, Chemistry 3410, and Physics 1420 or Physics 2420.

**5360 Selected Topics in Analytical and Inorganic Chemistry.** (3-0) The topics offered periodically are: (A) Separation Methods in Chemical Analysis. The principles of gas chromatography and high-performance liquid chromatography are discussed with a balance between theory and practical methods necessary to effect separation. (B) Organometallic Chemistry. The preparation and properties of organic derivatives of representative and transition elements are surveyed with emphasis on the correlation of structure and bonding with chemical reactivity. (C) Transition Metal Chemistry and Homogenous Catalysis. Structure and reactivity in transition metal complexes are examined from the perspective of Ligand Field Theory and reaction kinetics. Mechanisms of homogenously catalyzed reactions are discussed in terms of cyclic processes comprised of simple unit reactions. (D) Advanced Methods of Analytical Chemistry. Methods covered include X-ray, radiochemistry, Raman spectroscopy, fluorescence spectroscopy, emission spectroscopy, and Carbon-13 nmr.

Prerequisites: Chemistry 3410, Chemistry 4440.

***5370 Problems in Chemistry.** Open to graduate students on an individual basis by arrangement with the faculty member concerned.

**5375 Biochemistry.** (3-0) A course devoted to a study of the chemistry of carbohydrates, lipids, proteins, enzymes, and nucleo-proteins. A study of enzyme kinetics and thermodynamics of coupled reactions is included. (F,SS-I)

Prerequisites: Chemistry 2420, Chemistry 3340, Chemistry 3410 or permission of the department.

***5380 Selected Topics in Biochemistry.** (3-0) The topics offered periodically are: (A) Physical Biochemistry. A nonmathematical introduction to the physical techniques of biochemistry with emphasis on the interpretation of experimental data from electrophoresis, chromatography, immunological methods, ultracentrifugation, radioisotopes, and spectroscopy. (B) Neurochemistry. An introduction to the biochemistry of nerve tissue. Topics include chemical composition metabolism, drug action, and special senses.

Prerequisite: Chemistry 4375-5375 or Chemistry 4385-5385.

**5385 Biochemistry.** (3-0) A study of digestion, absorption, vitamins, intermediary metabolism, and respiration. (S,SS-II)

Prerequisites: Chemistry 2420, Chemistry 4375, and six semester hours of biology or permission of the department.

**5395 Fundamentals of Research.** (2-3) Course is designed to acquaint the beginning graduate student with materials and methods of chemical research.

**5399 or 5699 Thesis.**

**5412 Analysis and Synthesis of Organic Compounds.** (3-4) Lectures and laboratories on the principles and techniques used in identification and synthesis of organic chemicals. Analytical techniques include qualitative and spectral methods. (F)

Prerequisite: Chemistry 2420.

***May be repeated once with different emphasis for additional credit.
Department of Mathematics
and Computer Science

Graduate Faculty

**Bandy, Carroll Luttrell**, Associate Professor of Mathematics. B.S., Arkansas Polytechnic College; M.S., University of Arkansas; Ph.D., University of Houston. (Topology, Differential Equations)

**Borm, Alfred Ervin**, Associate Professor of Mathematics. B.S., The University of Texas at Austin; M.A., University of Washington; Ph.D., The University of Texas at Austin. (Modern Algebra, Computer Science)

**Carlisle, Washington Homer, III**, Associate Professor of Mathematics. B.A., M.A., Ph.D., Emory University. (Abstract Algebra)

**Chatfield, John Albert**, Professor of Mathematics. B.S., M.A., Southwest Texas State University; Ph.D., The University of Texas at Austin. (Analysis, Integration Theory)

**Doerr, Roy Frederic**, Assistant Professor of Mathematics and Supervisor of Student Teaching. B.S. in Ed., Southwest Texas State University; M.A., The University of Texas at Austin. (Mathematics Education)

**Early, Grady Gaston**, Professor of Mathematics. B.A., Arlington State College; M.S., Ph.D., Texas A & M University. (Computer Science)

**Edgew, John James, Jr.**, Professor of Mathematics and Supervisor of Student Teaching. B.S., Lamar State College of Technology; M.A., Sam Houston State University; Ph.D., The University of Texas at Austin. (Mathematics Education)

**Hazelwood, Donald Gene**, Professor of Mathematics. B.A., The University of Texas at Austin; M.A., M.S., Ph.D., Syracuse University. (Analytic Number Theory)

**McCabe, Thomas Francis**, Associate Professor of Mathematics and Computer Science. B.A., Southwest Texas State University; M.S., Ph.D., Texas A & M University. (Analysis, Statistics, and Computer Science)

**McClung, Harry Byron**, Associate Professor of Mathematics. B.A., M.S., Ph.D., West Virginia University. (Applied Mathematics)

**McEwen, Henry Nylon**, Professor of Mathematics. B.S., M.Ed., Hardin-Simmons University; Ph.D., The University of Texas at Austin. (Group Theory)

**Northcutt, Robert Allan**, Professor of Mathematics. B.A., M.A., Ph.D., The University of Texas at Austin. (Ordinary Differential Equations)

**Pixley, Carl Preston**, Associate Professor of Mathematics. B.A., University of Omaha; M.S., Rutgers University; Ph.D., University of New York at Binghamton. (Topology)

**Ratliff, Ernest Francis, Jr.**, Associate Professor of Mathematics. B.S., McNeese State College; M.A., Ph.D., University of Oklahoma. (Algebra)

**Sawey, Ronald Marvin**, Assistant Professor of Computer Science. B.A., M.A., Ph.D., The University of Texas at Austin. (Operations Research)

**Sellars, Harold Leroy**, Assistant Professor of Computer Science. B.S. in Ed., M.A., University of Alabama.

**Smith, James Dennis**, Assistant Professor of Mathematics. B.A., M.A., The University of Texas at Austin; Ph.D., Texas Christian University. (General Topology)
Spellmann, John Winston, Professor of Mathematics and Chair of the Department of Mathematics and Computer Science. B.A., Texas Lutheran College; M.A., Ph.D., Emory University. (Differential Equations)

Thickstun, Thomas Lusk, Assistant Professor of Mathematics. B.A., Ph.D., University of California, San Diego. (Topology)

Torrejon, Ricardo Marcelo, Assistant Professor of Mathematics. B.S., Concepcion Universidad de Concepcion, Chile; M.A., Universidad del Estado, Chile; M.S., Ph.D., University of Iowa. (Differential Equations)

Wade, James Frederick, Assistant Professor of Computer Science. B.S., M.S., Ph.D., University of Missouri. (Computer Science)

Warshauer, Max Leon, Assistant Professor of Mathematics. B.A., University of Chicago; Ph.D., Louisiana State University.

Degree Programs

The Department of Mathematics and Computer Science offers the Master of Arts, Master of Science, and Master of Education degrees with a major in mathematics, and the Master of Arts and Master of Science degrees with a major in computer science. The Master of Arts degree consists of a minimum of 30 hours including at least 24 hours (which includes a thesis) in mathematics or computer science and a minor which may or may not be from the science area. The Master of Science degree with a major in mathematics consists of a minimum of 24 hours plus a thesis, or a minimum of 36 hours without a thesis. The Master of Science degree with a major in computer science consists of a minimum of 30 hours including a thesis, or a minimum of 36 hours without a thesis. The non-thesis Master of Science degree consists of a minimum of 27 hours in the major and a minimum of 9 hours in the minor. The minor for a Master of Science degree must be from the science area. The Master of Education degree consists of 36 hours without a thesis and usually the minor must be taken outside the science area. Students are advised to contact the mathematics graduate adviser or the computer science graduate adviser for more detailed information.

These courses are designed to develop studies appropriate to preparing students for doctoral research, community college teaching, public school teaching, or for careers in applied mathematics, statistics, or computer science. The faculty has specialists in algebra, analysis, applied mathematics, computer science, differential equations, number theory, mathematics education, and topology. The library collection is extensive in both journals and reference works with current journals available in a reading room convenient to the departmental offices.

For admission to the graduate program in computer science, applicants are generally required to have a Graduate Record Examination score of 600 on the Quantitative portion, in addition to meeting the basic requirements for admission to the Graduate School.

Financial Aids Program. Graduate students are encouraged to work as Assistant Instructors. The stipends for these assistantships are comparable to the national norms and generally require teaching two courses per semester. Information may be obtained by writing the Chair of the Department of Mathematics and Computer Science.

Courses Offered

Mathematics

*5301 Partial Differential Equations. (3-0) Theory and application of partial differential equations; deduction of the differential equation; use of vector and tensor methods; equations of the first order; wave equations; vibrations and normal functions; Fourier series and integral; Cauchy's methods, initial data; methods of Green; potentials; boundary problems; methods of Riemann-Volterra; characteristics.

Prerequisite: Mathematics 3323 and consent of the instructor.

*May be repeated with different emphasis for additional credit.
5303 History of Mathematics. (3-0) A study of the development of mathematics and of the accomplishments of men who contributed to its progress. Can not be used on a degree plan for M.A. or M.S. degree.

**5304 Topics in Mathematics for the Secondary Teacher.** (3-0) A study of current trends and topics found in the secondary school mathematics curriculum with the goal of improving the mathematical background of the secondary teacher. Course content will be flexible and topics will be selected on the basis of student needs and interests. Can not be used on degree plan for M.A. or M.S. degree.

**5305 Advanced Course in Probability and Statistics.** (3-0) Advanced topics in probability and statistics. See Computer Science 5305.

Prerequisite: Mathematics 4305.

**5307 Modern Algebra.** (3-0) Topics in modern algebra. Materials will be adapted to the needs of the class.

Prerequisite: Mathematics 4307, or consent of instructor.

**5309 Foundations of Analysis.** (3-0) A critical study of the bases of mathematical analysis. Material will vary according to the needs of the class.

Prerequisite: Mathematics 4315, or consent of the instructor.

**5311 Foundations of Differential Equations.** (3-0) A critical study of the foundations of derivation equations, operator spaces and such basic topics. Recent developments in this field will be investigated and independent investigation will be encouraged.

Prerequisite: Mathematics 3323 and consent of the instructor.

**5312 Functions of a Complex Variable.** (3-0) Modern developments in the field of functions of a complex variable.

Prerequisite: Mathematics 4315, or consent of the instructor.

**5317 Problems in Advanced Mathematics.** (3-0) Open to graduate students on an individual basis by arrangement with the mathematics department. A considerable degree of mathematical maturity is required.

5319 The Theory of Integration. (3-0) A course in the theory of integration, with special emphasis on Lebesgue integrals. A course in the theory of real variables, with a knowledge of point set theory, is desirable as a background for this course. A considerable amount of mathematical maturity is required.

Prerequisite: Mathematics 3380 and consent of the instructor.

**5330 Topics in Topology.** (3-0) Selected topics in topology. Material will be varied according to the needs and interests of the class.

Prerequisite: Mathematics 4330.

**5336 Topics in Applied Mathematics.** (3-0) Topics selected from optimization and control theory, numerical analysis, calculus of variations, boundary value problems, special functions, or tensor analysis. Material will be varied according to the needs and interests of the class.

Prerequisite: 6 hours of advanced mathematics pertinent to topic and consent of instructor.

**5373 Theory of Functions of Real Variables.** (3-0) Discusses those topics which will enable the student to obtain a better grasp of the fundamental concepts of the calculus of real variables and the more recent developments of this analysis.

Prerequisite: Mathematics 3323 or Mathematics 3380.

5399 or 5699 Thesis.

**May be repeated once with different emphasis for additional credit.**
Computer Science

**5305 Advanced Course in Probability and Statistics.** (3-0) Advanced topics in probability and statistics. See Mathematics 5305.
Prerequisite: Mathematics 4305 or Computer Science 4305.

**5308 Advanced Systems Programming.** (3-0) Design and analysis of systems software including compilers and operating systems. Recent developments in this field will be investigated.
Prerequisite: Mathematics 4328, or consent of the instructor.

**5318 Advanced Programming Techniques.** (3-0) Advanced topics in computer programming. Languages, information structure, and file maintenance.
Prerequisite: Computer Science 3408, or consent of instructor.

**5328 Data Structures.** (3-0) Advanced topics in linear lists including stacks, queues, circular and linked lists; binary trees; strings; recursions.
Prerequisite: Computer Science 3358.

**5338 Formal Languages.** (3-0) Advanced topics in automata theory, grammars, Turing machines, parsing theory, algorithmic complexity, artificial intelligence, and syntactic methods.

**5348 Computer Organization and Design.** (3-0) Analysis and synthesis of sequential logic circuits. Comparison of computer architectures. Practical considerations and models of computer systems.
Prerequisites: Computer Science 3404 and consent of the instructor.

**5368 Topics in Computer Science.** (3-0) Selected topics in computer science from advanced areas of computer systems, operations research, data structure, or computer design. Material will be varied according to the needs and interests of the class.
Prerequisite: 6 hours senior level computer science, or consent of instructor.

5399 or 5699 Thesis.

Department of Physics

Graduate Faculty

Anderson, Robert Ernest, Professor of Physics. B.S., M.S., Texas A&M University; Ph.D., The University of Texas at Austin.

Crawford, James Robert, Professor of Physics and Chair of the Department of Physics. B.S., Phillips University; M.S., University of Arkansas; Ph.D., Kansas State University.

Jackson, William Roy, Jr., Associate Professor of Physics. B.A., Columbia College; M.A., Ph.D., Rice University.

Michalk, Victor Edward, Professor of Physics. B.S., M.S., Texas A&M University; Ph.D., Texas A&M University.

Olson, Donald Wallace, Assistant Professor of Physics. B.S., Michigan State University; Ph.D., University of California, Berkeley.

**May be repeated once with different emphasis for additional credit.**
Degree Programs

Three degree options are available to students majoring in physics. The standard program which leads to the Master of Science degree, requires 15-18 hours in physics, 9-6 hours in another science, and a minimum of 6 hours of thesis. The Master of Science degree program without a thesis also is available. This optional program requires 6 hours of course work in lieu of the thesis and 6 hours of additional course work. A third option differs from the standard M.S. program only in that the minor of 9-6 hours need not be in another science. This program leads to the Master of Arts degree and is not available with a non-thesis option.

Financial Aids Program. Assistantships are available on a limited basis, and applications should be submitted by June 1. Inquiries and/or applications for assistantships should be mailed to:

Chair, Department of Physics
Southwest Texas State University
San Marcos, Texas 78666-4616

Courses Offered

5311 Nuclear Physics. (3-0) The study of radioactivity, nuclear structure, binding energies, and particle accelerators. (S)
Prerequisite: Physics 3312.

5312 Quantum Mechanics, Part II. (3-0) A continuation of Quantum Mechanics, Part I, Physics 4312. Topics covered include time independent and time dependent perturbation theory, multiparticle systems, and the Pauli exclusion principle.
Prerequisite: Physics 4312, or approval of instructor.

5320 Solid State Physics. (3-0) An introductory course in the theory of solids.
Prerequisite: Mathematics 3323.

5335 Survey of Air Pollution Problems. (3-0) A survey in air pollution problems involving particulate and gaseous contaminants. Topics covered include the major sources, cleansing mechanisms, effects, measurement procedures, and ambient air standards of the primary pollutants.
Prerequisite: Two semesters of physics, or approval of the instructor.

5336 Methods and Techniques of Physical Science. (2-4) This course includes methods of instruction and laboratory techniques of topics recommended by the Texas Education Agency to be included in a physical science course in public schools. See Chemistry 4336-5336.

5337 Methods and Techniques of Physical Science. (2-4) This course includes methods of instruction and laboratory techniques of topics recommended by the Texas Education Agency to be included in a physical science course in public schools. See Chemistry 4337-5337.

5340 Advanced Dynamics, Part II. (3-0) Classical mechanics at an advanced level. Topics covered include special relativity in classical mechanics, Hamilton equation of motion, canonical transformations, and Hamilton-Jacobi theory.
Prerequisite: Physics 4313, or approval of the instructor.

*5370 Problems in Advanced Physics. (3-0) Open to graduate students on an individual basis by arrangement with the Department of Physics.

**5395 Fundamentals of Research. (2-6) Course is available to graduate students only upon the invitation of the department.

5399 or 5699 Thesis.

*May be repeated once with different emphasis and prior approval of the department.
**May be repeated with prior approval of department.
Interdisciplinary Studies

Interdepartmental Studies

Degree Programs

The Interdisciplinary Studies program leading to the degrees of Master of Arts in Interdisciplinary Studies or Master of Science in Interdisciplinary Studies is designed for the mature student whose educational needs will be met best by a nontraditional course of study. Programs in Interdisciplinary Studies are available in all the departments at SWT which offer graduate degree programs. The MAIS degree is available in those departments which offer the Master of Arts degree, and the MSIS degree is available in those departments which offer the Master of Science degree. Occupational Education also offers both the MAIS and MSIS degrees. Dr. Michael J. Pierson, Director of Occupational Education, should be contacted if you plan to study through the Occupational Education program.

Each Interdisciplinary Studies student will be referred to a graduate adviser and assigned a committee to help plan a 39 hour minimum, three-module program: Effective Communications (9 hours), Academic Area (21 hours), and Exit Module (9 hours). Up to 9 hours of requirements in the Academic Area may be met by experience, judged either by means of refereed testing after enrollment in specific courses or by the Work/Life-Experience Evaluation Board. The Exit Module may be a combination of research and thesis, an internship-practicum, or a cluster of courses. Any degree plan is tentative until it has been approved by the Dean of Graduate Studies and Research.

The Interdisciplinary Studies program does not replace the traditional academic program in any area. Persons whose educational goals are best met by established programs should enroll in those areas. Students who do wish to follow a program of Interdisciplinary Studies should confer with the Dean of Graduate Studies and Research or an Interdisciplinary Studies graduate adviser through a department or through Occupational Education.
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SOUTHWEST TEXAS STATE UNIVERSITY
GRADUATE SCHOOL
SAN MARCOS, TEXAS 78666-4605
Application for Admission

Name: ________________________________ (Last) ________________________________ (First) ________________________________ (Middle) ________________________________ (Middle Initial) ________________________________ (Maiden)

S. S. #________________________________ SEX: M or F

Current Address: ____________________________________________

Permanent Address: ____________________________________________

Address: ____________________________________________

Telephone: ____________________________________________

Residency: Have you resided in the State of Texas (other than as a college student) for the past 12 months? □ Yes □ No

Have you attended SWT previously? _______ In Residence _______ By Extension _______ By Correspondence _______

Residence: □ 1 □ Caucasian 2 □ Indian 3 □ Black 4 □ Oriental 5 □ Spanish 6 □ Foreign 7 □ Other — Specify: _______________________

Are you a U.S. citizen? □ Yes □ No If not, what is your status?

Occupation/Place of Employment: ____________________________ Work Phone: ____________________________

Next of kin: ____________________________________________ Relationship: ____________________________

Application: □ 1 □ Regular Visiting Student □ 2 □ Extended Admission □ 3 □ Special Student □ 4 □ Non-Degree Seeking □

List all colleges and universities attended. Two (2) official transcripts are to be sent directly to the SWT Graduate School from each university attended.

Name of Institution: ____________________________ State: _______________ From: _______________ To: _______________ Degree: _______________

Date first attended SWT: ____________________________ Date last attended SWT: ____________________________

Failure to list all institutions previously attended may result in dismissal from Southwest Texas State University.

Are you currently enrolled? □ Yes □ No Name of school: ____________________________

Undergraduate degree held □, or to be received □ Date: ____________________________

Institute granting undergraduate degree: ____________________________

Have you attended SWT previously? Date: ____________________________

Proposed master's degree: ____________________________

Minor: ____________________________

Thesis? □ Or, Non-Thesis? □

Do you plan to seek certification at SWT? □ Yes □ No

Proposed certification: ____________________________

Do you hold a teaching certificate? □ Yes □ No Specify: ____________________________

If not seeking a master's degree or certification, please state your plans: ____________________________

I hereby certify that all of the above statements made by me are true and complete and that I have not omitted any relevant information. I also certify that I will inform the SWT Graduate School of any changes in place of residence of myself or any other changes in the above record which occur. I understand that the University may also require that I submit additional information in consideration of this application. I acknowledge that deliberate omissions or falsifications subject me to the University's disciplinary sanctions.

Signature of Applicant: ____________________________ Date: ____________________________

No person shall be excluded from participation in, denied the benefits of, or be subject to discrimination under, any program or activity sponsored or conducted by Southwest Texas State University on any basis prohibited by applicable law, including, but not limited to, race, color, national origin, religion, sex, or handicap.
Graduate School Checklist Explanations

You must file an official application for admission with the Graduate School within the deadlines announced (July 15 for Fall; December 1 for Spring; April 15 for Summer Session 1; and June 1 for Summer Session II). Two official transcripts showing all your college work attempted should be ordered. Your personal copies are not acceptable. Allow enough time for your transcripts to arrive within the stated deadlines. Timing is very important; applications received after the published deadlines are extremely difficult to process in time for registration although the Office of Graduate Studies and Research will make every effort to process late applications.

Admission is granted by the Dean of Graduate Studies and Research upon the recommendation of your prospective department. The minimum admission requirement is a 2.75 GPA on your last 60 semester hours of your baccalaureate degree. If your GPA is less than 2.75 but not less than 2.50, you should have a GRE score of 900 or above. If you do not meet the minimums, you may be considered for conditional admission. Some degree programs may have higher admission requirements. You should also realize that admission to Graduate School is not the same as admission to a specific program. The departmental graduate adviser may decline to accept an applicant if there is reason to believe that the applicant might not be qualified for a particular program.

Applicants for the School of Business are required to take the Graduate Management Admission Test and applicants for all other degree programs are required to take the Graduate Record Examination. Even if you have a superior grade-point average, you must take the appropriate test (GRE or GMAT) during your first long semester enrolled in Graduate School at Southwest Texas State University, if you have not had the examination within the preceding twenty years.

Once you have been admitted, a degree outline is drafted by your department for you and forwarded to the Office of Graduate Studies and Research for approval. An official degree outline is then prepared, and you will be notified to sign your outline and obtain your copy of it in the Office of Graduate Studies and Research. Any course taken prior to the signing of the official degree outline is taken at your own risk.

If your program of study calls for a thesis, you must confer with your departmental graduate adviser and select a thesis committee and topic. In your first semester of thesis work, a “thesis proposal” bearing the signatures of the members of your thesis committee and your graduate adviser must be submitted to the Dean of Graduate Studies and Research for approval. Failure to obtain approval before beginning research can cause major problems for you. You must also be registered for Thesis 5399 or 5699 in any semester in which supervision or guidance is received, and you must be registered in Thesis 5399 or 5699 in your semester of graduation.

In your proposed semester of graduation, you must pay a required $12.00 diploma fee. You must complete the necessary diploma forms in the Office of Graduate Studies and Research at the beginning of the semester, or during the first summer session if you will be graduating in August. (Consult the official University Calendar for deadlines). Failure to pay the required fee and complete the necessary forms will result in postponement of graduation. If you pay the fee and complete the forms, but fail to graduate for any reason, the entire process must be repeated the next semester of anticipated graduation but you will pay a $3.00 fee. Results of the required Comprehensive Examination and clearance of all “I” or “P” grades must be in the Office of Graduate Studies and Research no later than 10 days prior to graduation. You will be required to have a 3.0 grade-point average minimum in your major and in your minor. It is advisable for you to periodically check with the Office of Graduate Studies and Research during your final semester to ensure all is in order for your graduation. Within the last few weeks of the semester, you will receive from the Vice President of Academic Affairs by mail a general checklist of clearances to be made and further graduation procedures to be followed.

If you should require any further information regarding the SWT Graduate School, please feel free to contact the Office of Graduate Studies and Research. You may reach us at: Area Code 512-245-2581.
The progressive university with a proud past.